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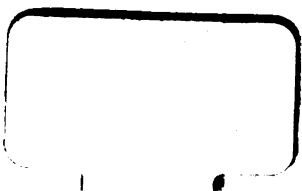
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ARMY APPROPRIATION BILL, 1921

HEARINGS

BEFORE

SUBCOMMITTEE No. 1

OF THE

COMMITTEE ON MILITARY AFFAIRS

HOUSE OF REPRESENTATIVES

SIXTY-SIXTH CONGRESS

SECOND SESSION

In One Volume

MARCH 25, 1920—APRIL 2, 1920



WASHINGTON
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1920

SUBCOMMITTEE NO. 1
COMMITTEE ON MILITARY AFFAIRS.

SIXTY-SIXTH CONGRESS.

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ARMY APPROPRIATION BILL, 1921.

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Thursday, March 25, 1920.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. Gentlemen, we are about to take up the tentative draft of the Army appropriation bill for the fiscal year 1921. We hope to finish the hearings on this tentative draft in a week, but at any rate not later than 10 days from now.

Gen. Lord is here this morning and also Gen. Churchill, the Chief of the Division of Military Intelligence, and we will be glad to hear Gen. Churchill on the item for contingencies of the Army, on page 2.

WAR DEPARTMENT CLAIMS BOARD.

STATEMENT OF BRIG. GEN. H. M. LORD, CHIEF, DIRECTOR OF FINANCE, AND MR. JOSEPH FAIRBANKS, VICE CHAIR- MAN WAR DEPARTMENT WAR CLAIMS BOARD.

Gen. LORD. I would like, if I may, Mr. Chairman, to make a brief preliminary statement.

The CHAIRMAN. You may proceed.

Gen. LORD. In accordance with your request, we are submitting and preparing to submit an estimate on four bases, under the terms of the reorganization bill which recently passed the House; that is, submitting estimates for the full enlisted strength of the bill and also for an enlisted strength of 175,000, 200,000, and 225,000, as requested by the chairman of the committee. The preparation is not all completed, but we have some estimates ready to submit to the committee, and I think there will be no interruption because of lack of witnesses. We will take up preliminarily certain items which we regard as constants, which are not dependent upon the strength of the Army, so that under all of these items there will be only one submit, no matter which strength is finally decided upon.

I wish to get into the record, Mr. Chairman, the fact that we are at work upon an inheritance of the war that will call for many millions of dollars and will have no relation whatever to the operation and maintenance of the Army provided for under the reorganization bill, although these extra millions will be charged up against that organization.

I would like to repeat that statement, that this estimate carries millions of dollars for war work which have no relation whatever to the operation and maintenance of the Army for which you may provide.



ARMY APPROPRIATION BILL, 1921.

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I wish to get into the record, Mr. Chairman, the fact that we are at work upon an inheritance of the war that will call for many millions of dollars and will have no relation whatever to the operation and maintenance of the Army provided for under the reorganization bill, and these expenditures will be charged up against that organization.

I think it is important that this estimate carries no relation whatever to any for which you may

The CHAIRMAN. Have you been able to segregate those amounts from the other amounts for the pay of the Army, etc.?

Gen. LORD. We have not been able to do it and can only do it approximately, but what we have in mind doing, if we can, is to furnish the committee with something of that sort as a basis which will be of help to the committee in supporting the estimates. But work of that sort enters so closely into all of the work of the Army personnel of all sorts that it is difficult to differentiate what is for the war work and what is for the maintenance of the Army.

Seven years after the close of the Spanish-American War the War Department had reduced its personnel in Washington by 70 per cent, and the 30 per cent remaining were made a part of the permanent force. One year after the Spanish-American War the personnel was reduced 5 per cent only. One year after the signing of the armistice at the end of the World War we had reduced our personnel in the War Department 46 per cent. This is an index of what progress we have made in settling these very intricate and extraordinary problems that have grown out of this war.

The relative progress made is very much in excess of the progress made at the close of the Spanish-American War, although the problems are much more involved and larger in amount and volume, and much more troublesome in every way.

The point I wish to make is that we have been settling a business that will approximate \$18,000,000,000 in actual expenditure before the books are finally closed, and it is very manifest that you can not definitely settle up a business of that size simply at the signing of a paper or the drop of a handkerchief. It will require a dozen years or more to settle up the work that has resulted from the operations of this great World War.

The CHAIRMAN. Let me get that exactly. You say that the costs of the Military Establishment of the Government approximated between \$17,000,000,000 and \$18,000,000,000?

Gen. LORD. Yes. The actual expenditure at the present time is in excess of \$16,000,000,000.

Mr. McKENZIE. There is over a billion dollars of unsettled claims before you now?

Gen. LORD. Approximately a billion and a half, I should say.

I wish to emphasize the fact that the work of settling this extraordinary business, caring for these stores, settling the contracts and claims of soldiers, and the working out of these problems will be charged against your bill. They will be an inheritance from the World War.

The CHAIRMAN. During the progress of this hearing you will be able to inform the committee, in reference to the various sums which you submit, how much is to be charged to the Army organization and how much is a hold over from the war?

Gen. LORD. That is rather a difficult thing to do, and probably impossible. But I hope before the end of the hearing to submit an approximation of what I think is the amount under this bill that we can definitely allocate to the war operations.

We have prepared for the use of the committee in the committee print of the bill certain data which I think will be of advantage and help the committee. With each item you will find a statement of the appropriations under that item beginning with 1909 and closing

with 1917, which we may consider as the expense of the Army under normal conditions. The expense for 1918 and 1919 would be no index whatever so far as the normal expense of the Army is concerned, because those were war expenditures and covered war operations. Under each of these appropriation items you will be given the date of the enactment of the law under which these appropriations were made, giving the changes in the law and the dates of the changes.

If you will turn to page 14 of your bill you find preceding page 14 a statement of the enactment of law for Pay of the Army. You will notice that the first law was enacted on December 23, 1791, and so it goes on, showing the dates of the various changes in the bills covering the pay of officers and enlisted men, clerks and messengers, pay of people on a retired status, mileage—every enactment of law or amendment to that law being covered in the record.

At the end of the statement are certain tables in which we carry out per capita, as we have done in the preceding sheets, showing the per capita for the various classes of appropriations for certain years. The first photostat covers the support of the Army and the graph showing the rise and fall of the line of appropriations, and information which we think will be of value in connection with that chart.

The next chart following that is interesting as illustrating where the greater proportion of your Army appropriation goes. If you will examine it you will see that the large column, column No. 1, is "Transportation of the Army and its supplies," which of itself comprises 39.29 per cent of the entire appropriation. Column No. 2 is for "Pay of the Army," and that is the next largest appropriation, being 27.91 per cent in 1920 of the expenses of the Army. Those two combined would make 58.2 per cent of total appropriations for 1920. "Regular Supplies" is next, and "Subsistence of the Army" is next after that. The next chart gives you the statement per capita of the appropriations for "Pay of the Army." The next is for "Transportation," and so on through the various tables, including certain tables of costs that enter very largely into this estimate of Army expenses.

The CHAIRMAN. On behalf of the committee, General, I want to thank you for the great care you have taken in getting up this very valuable information for the use of the committee.

Gen. LORD. May I assign a great deal of that credit to Col. T. L. Smith of my staff who, I think, has no superior in work of that description.

If the committee desires, we can now take up the item for "Contingencies of the Army."

The CHAIRMAN. That is on page 2. In connection with the item for "Contingencies of the Army," I received a letter from the Secretary of War a day or two ago in which he suggested two amendments, and I will have the clerk of the committee read the letter.

(The clerk read the letter referred to as follows:)

WAR DEPARTMENT,
Washington, March 19, 1920.

The CHAIRMAN COMMITTEE ON MILITARY AFFAIRS,
House of Representatives.

SIR: The Army appropriation act approved July 11, 1919, contains the following provisos under the title "Contingencies of the Army:"

"Provided, That the restrictions hereinabove recited concerning personal services and the amount allowable for per diem allowance shall not apply to so much of the

funds herein appropriated as may be required to carry out the purpose of existing laws relating to the sale of war supplies: *Provided further*, That none of the funds appropriated or made available under this act shall be used for the payment of any salary in excess of \$12,000 per annum to any civilian employee in the War Department."

The first of these provisos constitutes authority for the maintenance of the office of the Director of Sales, who is charged with the sale of all surplus war supplies in the United States. The continued operation of this office after the close of the current fiscal year is essential for the proper disposition of these supplies and a sufficient amount was included in the estimate submitted under "Contingencies of the Army" to cover the expenses of this office. It is discovered, however, that through inadvertence these provisos were omitted from the estimate as printed in the Book of Estimates, and this letter is written with the purpose of inviting the attention of the committee to the need for the inclusion of the wording above quoted in the next Army appropriation act.

Very respectfully,

NEWTON D. BAKER,
Secretary of War.

Gen. LORD. In connection with that I have an additional amendment, which has been approved by the War Department, and I will present that to the committee now, with reasons for the amendment.

The appropriation for "Contingencies of the Army" heretofore has been used for certain definite purposes. Last year the estimate which the committee approved for "Contingencies of the Army" amounted to \$100,000. After the estimates had been submitted and during the hearings, the Secretary of War asked that \$1,000,000 be appropriated for the purpose of financing the operations of the Director of Sales, and that an amendment be submitted providing for that particular function.

When the bill became law there was appropriated \$1,000,000 under "Contingencies of the Army," presumably \$100,000 for the regular "Contingencies" and \$900,000 for the operations of the Director of Sales and his force.

The amendment just submitted restores to the bill as submitted, the provision that was put in the bill under which we are now operating, and the Director of Sales asks for an appropriation this year of \$400,000.

There has been another war activity, the settlement of terminated contracts, both regular and irregular, the regular contracts terminated and settled in accordance with the existing provisions of law, the irregular contracts settled by means of awards made under the Dent act, of March 2, 1919. During the past year the settlement of these contracts has been carried on by the War Department Claims Board under the provisions of that act of March 2; that is, the authority given in that act was delegated to the War Department Claims Board by the Secretary of War, to make final awards in connection with these irregular contracts.

That board and its allied organizations, the Board of Appraisers and the Board of Contract Adjustment, has been financed by several different appropriations, including general appropriation of the Quartermaster Corps, and the appropriation for "Storage and shipping facilities." It has seemed to the Secretary of War and to the War Department and to us all that it would be better to make a definite provision for this activity as we have made for sales, so that we will not be obliged to use various appropriations which we have used, and which, if the Overman act should be rescinded, we would have no authority to use.

The CHAIRMAN. Do I understand by that that the War Department has been taking certain amounts from various appropriations that were intended to cover various activities of the Army and applying that money to this War Department Claims Board and the other boards you mention, the Board of Appraisers and the Board of Contract Adjustment?

Gen. LORD. There was no one of the appropriations available for all these purposes because the board settles Quartermaster claims, Ordnance claims, and all classes of claims, and under the provisions of the Overman Act we have used something from the various appropriations to pay the overhead expenses for that work.

The CHAIRMAN. Can you tell what that was?

Gen. LORD. I think probably Col. Fairbanks, who is here representing the War Department Claims Board, can tell you that.

I have prepared here to submit to the committee the following amendment to the provision for the appropriation for the contingencies of the Army:

Provided, That the restrictions hereinbefore recited concerning personal services and the amount allowable for per diem allowance shall not apply to so much of the funds herein appropriated as may be required to carry out the purpose of existing laws relating to the sale of war supplies—

And this is inserted—

and the adjustment of war contracts and claims: *Provided, further, That none of the funds appropriated or made available under this act shall be used for the payment of any salary in excess of \$12,000 per annum to any civiliam employee in the War Department.*

Mr. McKENZIE. As I understand it, these boards have settled something like 24,000 claims. Am I right about that?

Gen. LORD. May I ask Col. Fairbanks to answer that question?

Mr. McKENZIE. Approximately that number.

Mr. FAIRBANKS. That is approximately correct, out of about 29,000 filed.

Mr. McKENZIE. And there are something between two and three thousand of what we call live claims still pending. Is that right?

Mr. FAIRBANKS. Yes; about 2,800 or 2,900.

Mr. McKENZIE. Many of those are large claims?

Mr. FAIRBANKS. Yes, sir.

Mr. McKENZIE. And the men interested in those contracts have obtained in the past a good deal of credit from banks to carry them while they were acting under the so-called contracts, and now the banks are urging the Government to pay these men so they can close down those credits. I am so informed. Am I correct about that?

Mr. FAIRBANKS. Yes, sir. I would like to make a little further explanation at the proper time with reference to the financial situation.

Mr. McKENZIE. I just wanted to get at one point in connection with that. The total of those claims amounts to something like a billion and a half dollars; is that correct?

Mr. FAIRBANKS. No, sir; not the claims. That figure is the total of the unperformed portions of their contracts which the United States would have been liable for had the contracts gone to completion. The amount of moneys which would probably be paid out, following the precedents we have established so far would probably be only about 12 or 15 per cent of that amount.

Mr. McKENZIE. Gen. Lord, do you know how many lawyers and other men are employed on these claims boards?

Gen. LORD. I do not. Col. Fairbanks can give you that information.

Mr. McKENZIE. How many of those men are drawing \$50 and \$75 a day? Do you know that?

Mr. FAIRBANKS. I have got the figures here with me.

Mr. McKENZIE. I would like to have that in the record, for your benefit as well as for the benefit of this committee, because it has come to my attention recently that many of these claims are being held off and the settlement of the claims deferred because of the fact that the longer these things are dragged out the longer these men will hold these positions at \$50 and \$75 a day.

Mr. FAIRBANKS. I would like an opportunity to explain the situation.

Gen. LORD. Col. Fairbanks had prepared himself to come before the committee at this time in connection with this appropriation. The estimate for these claims boards is \$200,000.

Mr. McKENZIE. You can put those facts in the record in connection with the proposed appropriation. As I understand it we pay some of these men \$12,000 a year, and I think it will be very appropriate to have those facts in the record.

The CHAIRMAN. In the statistical report of the War Department issued March 20 it appears that—

There are 3,177 contracts remaining to be liquidated. Of these the value of all except 28 of the Classification Board is known and amounts to \$1,442,957,000. Assuming that future liquidation can be effected at the same rate as has obtained in the past, the cost of liquidating the 3,149 contracts of known value may be estimated at \$251,582,000.

That is the statement of the War Department issued on March 20 on that subject.

Mr. McKENZIE. Mr. Fairbanks can, of course, elaborate on that.

Gen. LORD. I recommended that he come before the committee, inasmuch as the Dent Act, under which the boards are operating, emanated from this committee, and I suggested that he give the committee a report of what has been done and what remains to be done.

Mr. DENT. Does the Board of Contract Adjustment adjust valid contracts as well as those that were irregularly executed?

Mr. FAIRBANKS. Yes, sir.

The CHAIRMAN. You are also trying to compromise where people had valid contracts, but the necessities of the country did not require any further performance of the contracts on the part of the contractors?

Mr. FAIRBANKS. Yes, sir. With your permission, I would like to make a brief statement in connection with this matter.

The CHAIRMAN. Will you kindly state for the record your full name and the position you occupy in the Government service?

Mr. FAIRBANKS. My name is Joseph Fairbanks; I am vice chairman of the War Department Claims Board.

The CHAIRMAN. How long have you been in that position?

Mr. FAIRBANKS. I have held the position of vice chairman of the War Department Claims Board since about the 1st of December, 1919. Previous to that time I had been connected for several months with the matter of claims and settlements.

The CHAIRMAN. Who is the chairman of that board?

Mr. FAIRBANKS. Mr. Benedict Crowell, the Assistant Secretary of War.

The CHAIRMAN. You are acting under him?

Mr. FAIRBANKS. Yes, sir. At the time of the armistice there were outstanding some \$6,000,000,000 worth of contracts of the War Department. Of those contracts between four and five billion dollars were terminated on the ground that the Government had no need for the articles under contract. That \$4,000,000,000 constituted a liability which the United States had to settle with the contractors on some basis.

The general policy adopted was not to cancel and terminate the contracts outright, putting them out of existence thereby, leaving only a claim, but to suspend those contracts, so that it left the contracts in existence and made possible the negotiation of a termination agreement with the several contractors and to wind up the contractual relations of the United States. On that basis the contractors were invited to put in their claims and contracts, the unperformed portion of which is estimated to be about \$3,950,000,000, and they have been placed before the several claims organizations for adjustment in that manner. That was in itself a tremendous problem—business, legal, and economic.

The matter had not proceeded very far before it became apparent to the War Department that one method of coordination of all the separate bureau activities in reducing the contracts was essential, and for that reason the Secretary of War created what is known as the War Department Claims Board, with authority to supervise and coordinate all claim settlements and specifically to approve or disapprove of the settlement proposed by the subordinate boards. That board got under way in January, 1919. It has from the start been mainly a policy board, laying down policies and methods for the boards subordinate to it. It has had as high as 42 boards under its supervision scattered throughout the country.

The normal process for a contractor's claim to follow was that he would present it to the nearest local or district board at some point near to him in the country. With that board he would then negotiate a preliminary basis of settlement in the form of a contract. He would then forward that to the bureau board here in Washington, which board would approve or disapprove or amend the contract, and that would then be approved or disapproved by the War Department Claims Board.

Mr. DENT. Would it interrupt you to state at this point the personnel of that War Department Claims Board?

Mr. FAIRBANKS. The personnel at present, I think, is about 18. There are about 18 members of the War Department Claims Board proper, which board has supervision of all these other boards.

Mr. DENT. Can you give us their names and their salaries?

Mr. FAIRBANKS. Yes, sir. The chairman of the board is Mr. Crowell, the Assistant Secretary of War. I am the vice chairman. Maj. Gen. George W. Burr is a member of the board and has been from its organization. Gen. Lord, the Director of Finance, has long been a member of the board, represented, however, in its meetings by Lieut. Col. Sears. So far those are all commissioned officers, receiving the usual pay for officers of their grade.

Col. Harry F. Dalton is a member of the board charged with the supervision of the ordnance work, and he is also personnel officer of the board. Col. J. R. Delafield is a member of the board. He is also chairman of the Board of Contract Adjustment, and that is his special assignment. Col. J. L. Schley is a member of the board in particular charge of the work of the Purchase Claims Board, which includes the Quartermaster General's outfit. Lieut. Col. L. S. Keith is the statistical officer for the board and a member of it. Lieut. Col. Sears, whom I have mentioned, is a special member of the board representing the Director of Finance. Mr. R. C. Goodale is a civilian member of the board. He is a member of the standing committee of the board, a lawyer, and he also acts as a special adviser to the Secretary of War upon certain appeals from the Board of Contract Adjustment. His salary is at the rate of \$50 per diem.

Mr. James R. Frazier is a special assistant. He is a member of the board and is also a member of the standing committee of the board, which acts as a sort of executive committee, and he has special supervision for the board of the work of the Signal Corps Claims Board, the Chemical Warfare Claims Board, and the Board of Appraisers. Both of those gentlemen were previously in the military service.

The CHAIRMAN. Is the latter gentleman's salary the same as that of the first one you mentioned?

Mr. FAIRBANKS. No, sir; he receives \$750 per month. Mr. Campbell Scott is a member of the board and has been chief of the technical section of the board which comprises a number of engineers and technical experts. He has been receiving \$50 per diem, and his service is about concluded with the board. Mr. Jennings C. Wise is also a member of the board in special charge of the operations of the Transportation Claims Board and the Construction Division Claims Board. His salary is at the rate of \$7,500 per annum. He also was in the military service during the war.

Mr. E. H. Van Fossan, formerly a captain in the Army, is another member of the board, and he is charged with special duties in connection with the Ordnance Claims Board, approving or disapproving the settlements in the name of the War Department Claims Board. Mr. Van Fossan receives a salary of \$500 per month.

Mr. J. G. Stevenson is a member of the board also charged with special duties in connection with ordnance settlements and receives \$450 a month. Mr. A. L. Landsdale is the recorder of the board, performing a varied line of duties as its assistant and receives \$4,500 per annum.

Mr. M. D. Steever is a member of the War Department Claims Board and also a member of the standing committee, acting at times as chairman of that committee, and he is also charged with the supervision, as a special member of the board, of the Engineers' Claims Board. He receives a salary of \$750 per month.

Mr. Robert Marsh is a member of the board in charge of Air Service Claims Board work. He is not engaged with us all the time, but he receives \$50 a day for such time as he is away from his practice as a lawyer.

Mr. H. B. Shaw is also a member of the board and receives a salary at the rate of \$7,500 per annum. He is also charged with special duties in connection with the Air Service claims work and is a member of the standing committee.

I think I have named all the members of that board, as such.

Mr. McKENZIE. In addition to the members of the board, do you employ attorneys to examine the claims?

Mr. FAIRBANKS. There are a limited number of attorneys employed in connection with the War Department Claims Board. The greater number of attorneys employed by the department in connection with the examination of these claims are employed by the subsidiary boards, such as the Ordnance Claims Board, the Board of Contract Adjustment, the Board of Appraisers, and other boards of that nature.

Mr. DENT. You say there are 42 of those subsidiary boards?

Mr. FAIRBANKS. There have been. The work is so nearly at an end at the present time that the field boards are being rapidly wound up. In the purchase branch—that is, the quartermaster's branch—the zone claims boards have nearly all been drawn in to Washington from the field, and we are now engaged in a similar way in drawing in the ordnance district boards to Washington, and their work is nearly at an end.

Mr. McKENZIE. Do you have a record of the number of attorneys employed by these various boards and the salaries paid to them?

Mr. FAIRBANKS. Yes, sir. About a month or more ago a careful list of all the personnel employed by all the boards was prepared for another committee of the House, the subcommittee of the Committee on Appropriations in charge of the legislative, executive, and judicial appropriation bill, and with some reductions which have taken place, and possibly one or two substitutions, that report is substantially correct to-day.

Mr. McKENZIE. That was for a subcommittee of the Committee on Appropriations.

Mr. FAIRBANKS. Yes, sir. I can file that personnel report if you desire it, and have it brought up to date, so you can have an accurate statement up to date.

Gen. LORD. That report was compiled for the subcommittee of the House Committee on Appropriations in charge of the legislative, executive, and judicial appropriation bill.

The CHAIRMAN. That report was printed in the hearings of that subcommittee of the Committee on Appropriations?

Mr. FAIRBANKS. Yes, sir.

Mr. McKENZIE. Then it probably would not be necessary to repeat the printing of it in the hearings on this bill.

In addition to the attorneys, you employed a number of experts and investigators, men familiar with the character of the various kinds of goods purchased?

Mr. FAIRBANKS. Yes, sir. We have found it necessary in connection with the work of the board to have some expert construction engineers, because the claimants often are demanding sums of money for the amortization of their plants, or a question comes up in regard to the salvage value of a Government plant erected on land owned by the contractor and we think it is worth while to employ the very best expert advice in relation to such matters, and we have employed such men and paid them substantial sums for technical expert advice of that sort.

Mr. McKENZIE. I doubt, Mr Chairman, if it would be pertinent, but there is one thing I would like to have a picture of, and that is the total amount of money paid out by our Government in the settle-

ment of these claims and in protecting the Government's interests, that is, the total amount for all purposes. Then I would like to have the total reclaimed by salvage in the sale of articles so that we might have some idea of what we have been getting for the amount of money we have been expending in trying to bring about these settlements. If you can put this in the hearings and give us some sort of a picture of that kind so we can see where we are, I would appreciate it as one member of the committee.

Mr. FAIRBANKS. I think I can give you such a picture, if you will hear with me.

Mr. MCKENZIE. I will be very glad to have it.

Mr. FAIRBANKS. As I stated a while ago, the estimated uncompleted portion of all contracts and agreements requiring adjustment amounted to \$3,950,000,000 approximately. That involved 27,020 separate contracts or agreements, both formal and informal. Thus far there has been paid out in final and partial payments, \$404,000,000 approximately. That figure includes partial payments and the final payments included in that amounted to something like \$320,000,000, and represent about 12 per cent of the amount of obligations of the United States which have been retired, wiped out by this claims settlement. In other words, the claims organization has settled for about 12 cents on every dollar that would have been expended if the contracts had gone to completion. That perhaps is the simplest way of putting it.

Mr. MCKENZIE. You do not mean to say that was an actual saving, because if the contracts had gone through to completion the Government would have had to pay that sum?

Mr. FAIRBANKS. No, sir; it is only one way of picturing it. The maximum obligation would be for the completion of the contracts, and the minimum, so far as known, is the figure I have given you, 12 per cent.

To carry on that great business the total expense, as near as we can ascertain it for the year 1919 was \$8,941,010.62. That includes the salaries of commissioned officers and civilian personnel, traveling expenses, all overhead expenses of conducting this claims work through the calendar year.

The CHAIRMAN. Could you segregate those amounts and put into the hearing just what amount was paid for each branch of the service?

Mr. FAIRBANKS. Yes, sir. You will also find that in the hearings of the subcommittee of the Committee on Appropriations that I referred to a moment ago.

The CHAIRMAN. Then we will not ask you to repeat it.

Mr. FAIRBANKS. I can supplement it with another month's statement.

The CHAIRMAN. Would it take very long to prepare that statement?

Mr. FAIRBANKS. No, sir; it can be prepared in a day or two.

The CHAIRMAN. If you will kindly put in the additional information the committee will appreciate it.

Mr. FAIRBANKS. In connection with the total which I have stated, I would like to say that total represents approximately 2.75 per cent of the amount of money paid out in settlements during the same period. In other words, the Government during the year did about \$300,000,000 worth of business in settling with contractors at an overhead expense of 2.75 per cent, which represents only forty-four

one-hundredths of 1 per cent of the amount of obligations that have been liquidated during that period.

Mr. McKENZIE. That is very valuable information. Coming down to the practical matter in connection with this appropriation, you are asking for \$500,000?

Gen. LORD. The Director of Sales asked for \$400,000. The War Department Claims Board is asking for \$200,000 additional.

Mr. McKENZIE. That would be altogether \$700,000?

Gen. LORD. That would be \$700,000, with the \$100,000 asked for regular contingencies of the Army.

The CHAIRMAN. Before you go on with that I would like to ask Mr. Fairbanks how long a period of time in your opinion will it require to finish all of this business?

Mr. FAIRBANKS. The nature of the work is such that it can never come to a 100 per cent finish, because some of these cases in which we have been unable to agree with the contractors will undoubtedly go to the Court of Claims; but we are making a strenuous effort to complete the work, in a practical sense, during this fiscal year.

The CHAIRMAN. That is by June 30, 1920?

Mr. FAIRBANKS. By June 30, 1920, and to greatly curtail the contract claims organization by that time. There will be some work carried over into the next fiscal year of necessity, but as a large organization we expect to come to a practical conclusion by the close of this fiscal year. I realize, of course, that \$200,000 is a substantial sum in itself, but compared with the very large organization required last year it is almost a drop in the bucket.

Mr. McKENZIE. These claims have all been surveyed, have they not?

Mr. FAIRBANKS. They have all been surveyed?

Mr. McKENZIE. They have been gone over by your subcommittees and by your attorneys, and about all that remains to be done now is to adjudicate the differences between the contractors and the Government; is that not true?

Mr. FAIRBANKS. Yes, sir. Of course, that involves the consideration of a vast amount of detail in any number of these contracts.

Mr. McKENZIE. Has not that detail all been gone over in the year and a half that these claims have been pending? Or at least by the end of June they certainly will have been gone over, will they not?

Mr. FAIRBANKS. So far as the preliminary details are concerned, that will very largely have been completed by that time.

Mr. McKENZIE. Then what will be the necessity for Congress appropriating any money for personnel other than a fairly decent sized board of experts down here, say 7 or 8, or even 10, to pass upon these claims, as a final adjudicating body? What would be the necessity of Congress appropriating money to carry any men on the pay roll after July 1 next, so far as the matter of investigation is concerned, or the survey of any of the claims?

Mr. FAIRBANKS. Some of the contractors were very dilatory in filing their claims and in presenting the material for the War Department's examination. A certain amount of accounting in some cases has of necessity been entered upon which must continue at the plant, or elsewhere, which will be properly chargeable to the claims work.

I think any board of Regular Army officers which should undertake the final adjudication of some of these claims should insist on having expert advice to pass upon the data submitted and the information furnished in the expert's report. He is the best man to explain the significance of it to a board which has to pass on it.

Mr. McKENZIE. We have those experts now and we have had them for months, and we can continue them until July 1 under existing appropriations. What I want to know is what reason there would be for putting in a large appropriation here to continue men on the pay roll after July 1 next to do work which certainly has been gone over? If there is a specific case here and there that has not yet been surveyed, they can say we need help, and they may have those cases surveyed. You see the point I am driving at, do you not?

Mr. FAIRBANKS. Yes, sir; and if I could make clear to you the great complexity of the details in these cases I think I could make you see that this sum is not an unreasonable sum to continue the claims settlements during the coming fiscal year. The work is rapidly tapering off to an end. But it will require a considerable number of clerks and stenographers and attorneys and experts during the fiscal year. Perhaps no one can estimate it exactly, but I think we are safe in asking for \$200,000 for that work. I think the work can be accomplished for that sum.

Mr. McKENZIE. I appreciate the complexity of these claims fully, and I know that the average man, perhaps, would not know anything about some of the intricacies that are contained in some of these contracts, and that the Government could have something put over on it every day by the contractor if we did not protect ourselves by employing to guard the interests of the Government. But we have done that, and it does seem to me that when you have settled over 24,000 claims and you have your full force of experts who have been working on these claims which are partially adjudicated, that you could get all the data on the others assembled by the 1st of July, and that all that would necessarily remain to be done would be the passing upon the equities of the proposition by the board, which has the judicial function to enable it to do that, and we ought to limit it to that amount, it seems to me.

Mr. FAIRBANKS. If I may illustrate in a specific case. One very large and difficult group of cases has been the castor-bean claims. The Government contracted with some 19 prime contractors for a very large quantity of castor beans, and these 19 prime contractors throughout the South contracted in turn with some ten or twelve thousand farmers for the growing of castor beans. The bean seed for that purpose was furnished by the Government, and in many cases they either did not come up at all or came up in such shape that no beans grew on them. In some cases they would shoot up 40 feet tall, so that they had to cut them down with an ax and use a stump puller to extract the roots. Every one of those ten or twelve thousand farmers has a claim which he is entering through the prime contractor.

Mr. DENT. Are they recognizing those claims?

Mr. FAIRBANKS. Yes, sir. The matter of the legal liability was a very difficult one and it took months to establish it. Now the matter of getting the data on which to settle ten or twelve thousand farmers' claims is one of extreme difficulty, and while we are going

to make excellent progress by June 30, I do not think it will be wound up by that time.

Mr. McKENZIE. You are a man of experience and you would not consider these difficult claims, would you?

Mr. FAIRBANKS. No, sir; not each one by itself.

Mr. McKENZIE. It is a very simple principle of equity which underlies them, and it seems to me when you have established that principle on one of the claims you could settle those cases as rapidly as they would come to you. I can understand that when you have before you the case of the mechanism for making platinum points for shells and the amount of platinum in a point, there might be some complications that would require a good deal of investigation to find out the relative factors of cost that will enter into that. But in the case of a fellow who planted his beans and it did rain and they did not come up, and he did not raise any beans, and the Government furnished him beans for seed, it does not seem to me there is anything complicated about that.

Mr. FAIRBANKS. It is complicated once you have conceded that there is a liability to determine the measure of liability to each of the ten or twelve thousand farmers. We require a number of clerks to get that information and put it before this board you speak of.

Mr. McKENZIE. I will admit that if the point is to try to figure out some way whereby the Government can be held responsible on a thing of that kind it would be a rather complicated proposition.

Gen. LORD. Mr. Chairman, I understand it is the policy of the Secretary of War to replace these civilians on this board by June 30 with commissioned officers. Is that not true, Mr. Fairbanks?

Mr. FAIRBANKS. Yes, sir. I want to make that clear. We expect to curtail this organization at the close of the fiscal year and turn it over practically to the Regular Army organization. We have some Regular Army officers working with us at the present time, and I assume they will be utilized and some others will be gotten in before the 1st of July.

Mr. McKENZIE. If you do that then their salaries will be taken care of in the item for the pay of the Army, and we can cut this appropriation?

Gen. LORD. May I call attention to the appropriation side of it? Thus far we have been settling these claims by paying the overhead of the organization out of different appropriations in the Army appropriation bill. Beginning with July 1 there will be no authority for paying for the work of the board settling Ordnance contracts out of the Quartermaster appropriations. We should have after that time whatever clerical force is necessary to complete whatever work remains after the end of the present fiscal year, and we should have for that force some definite appropriation, to pay the clerical force necessary to permit that board, however it may be composed, whether of civilians or commissioned officers, to function.

The CHAIRMAN. You say you are asking for \$200,000 for the next fiscal year to enable you to go ahead with this work of adjustment. How do you propose to expend that money? How much will be required for each item provided for? What I mean is this: I would like to have a general statement showing that so much is to be used for legal expenses, so much for this kind of an investigation, so much for that kind of an investigation, and so on.

Mr. FAIRBANKS. The estimate has not been made up in just that way, but I think I can answer the substance of your question. We have taken the current expenses and taken what we have regarded as a reasonable fraction of that and projected it into the next year.

Mr. DENT. What is the percentage?

Mr. FAIRBANKS. In connection with the War Department Claims Board, the working expense for the last month of that board, exclusive of its numerous subsidiary boards, was about \$27,000. For the entire year at that rate it would be approximately \$325,000.

Now, for the first quarter—

The CHAIRMAN (interposing). That was for this year?

Mr. FAIRBANKS. The War Department Claims Board.

The CHAIRMAN. But you are asking, as I understand, for \$200,000 for the entire fiscal year 1921?

Mr. FAIRBANKS. Yes, sir. I am explaining the proportions. For the first quarter of the next fiscal year we estimated that the expenses for the War Department Claims Board would be about 50 per cent of the present monthly expenditures, and each succeeding quarter reduces that sum 50 per cent, reaching a total of \$70,000 for the War Department Claims Board for the year 1921. There is a similar decreasing scale for the War Department Board of Appraisers, costing \$30,000, and a similar decreasing scale of expenditure for the Board of Contract Adjustment, costing \$100,000, or a total of \$200,000 for those activities which we group under the head of claims settlement as a whole. I should explain that the bureau boards or local boards I have spoken of will rapidly go out of existence and the remaining functions of those boards will be concentrated in these boards I have mentioned.

Mr. DENT. You say you testified before the subcommittee of the Committee on Appropriations, having charge of the legislative, executive, and judicial appropriation bill? Did you ask for an appropriation from that committee for this item?

Mr. FAIRBANKS. No, sir. They asked for my testimony.

Mr. DENT. You are asking for no appropriation from that committee?

Gen. LORD. No appropriation was asked for there; no estimate was submitted for the War Department Claims Board to that committee.

The CHAIRMAN. Is there any further statement you desire to make?

Mr. FAIRBANKS. I would like to ask permission to file a comprehensive statement which will show the accomplishments of this claims organization from the time of the armistice up to date and incorporate it as a part of my testimony, because I believe the work has been economically, conscientiously and well carried on for the purpose of protecting the Government.

The CHAIRMAN. You would not delay the printing of the hearings if that request were granted, would you?

Mr. FAIRBANKS. I think I could furnish it within a couple of days, if that would be satisfactory.

The CHAIRMAN. That will be satisfactory.

WAR DEPARTMENT,
OFFICE OF THE ASSISTANT SECRETARY,
DIRECTOR OF MUNITIONS,
Washington, D. C., March 27, 1920.

Hon. JULIUS KAHN,
*Chairman Military Affairs Committee,
House of Representatives, Washington, D. C.*

DEAR SIR: Pursuant to permission given me by your subcommittee, I am transmitting herewith, for inclusion in my testimony, two statements summarizing the work which has been supervised by the War Department Claims Board.

The first of these (Exhibit 1) shows the progress made in adjusting contracts of the War Department, both formal and informal, suspended after the armistice.

The second (Exhibit 2) shows the expense incurred in the accomplishment of this work by the War Department Claims Board and its numerous bureau and field agencies for a period of 14 months ending February 29, 1920, and for the month of February, 1920. To this exhibit is attached an itemized statement (Exhibit 2A) of such expense for the month of February, which is submitted in response to your own request during the hearing.

One of the members of the committee requested a list of the employees engaged in the adjustment of contracts at per diem rates of \$50 to \$75. Such a statement is also submitted herewith (Exhibit 3). It should be understood that these men are experts in engineering, chemistry, law, and various technical subjects, who have had long practical experience in their several professions. Most of them devote only a small portion of their time to this Government service.

So far from there having been any tendency by these men, or other assistants, to prolong their work in order to hold such positions, the difficulty has been of directly opposite character, namely, that it has been very difficult to retain, in the face of commercial competition, men qualified in experience and judgment to carry on the responsible and involved business and legal negotiations in settlements with contractors.

During my testimony before the subcommittee there was read into the record by the committee a quotation from a statistical report of the War Department stating the number of contracts remaining to be liquidated and concluding with the following statement:

"Assuming that future liquidation can be effected at the same rate as has obtained in the past, the cost of liquidating the 3,149 contracts of known value may be estimated at \$251,582,000."

This last figure was not compiled by the War Department Claims Board, and it should not be taken as an estimate of the amount of money yet to be expended in contract settlements. While an accurate estimate is impossible, the sum yet to be paid out, in my judgment, will not exceed \$150,000,000, and of this amount a considerable portion will be applied as the repayment to the United States of advances from the War Credits Board to contractors. The figure quoted above, from the War Department statement, evidently did not take cognizance of the fact that substantial partial payments have already been made on many of the contracts not yet finally adjusted. I make this explanation to correct any possible misapprehension that the Treasury will be called upon for so large an amount as \$250,000,000.

Permit me to thank you for the opportunity afforded me by your committee to lay before it the work of the War Department Claims Board.

Very truly, yours,

JOSEPH FAIRBANKS,
Vice Chairman War Department Claims Board.

EXHIBIT 1.

Summary report of settlements of contracts and adjustments of agreements up to Mar. 20, 1920.

1	2	3	4	5	6	7	8	9
	Number of contracts and agreements submitted for settlement or adjustment.	Estimated obligations on suspended contracts and agreements outstanding at time of curtailment.	Number of contracts and agreements settled or adjusted to date.	That portion of obligations at time of curtailment (column 3) which relates to contracts, etc., settled to date (column 4).	Amount approved for payment in final settlement or final adjustment to date.	Percentage of amount approved for payment (column 6) to outstanding obligations under contracts and claims settled or adjusted (column 5).	Amount approved for payment on partial settlements or partial awards.	Savings effected by final payments approved (column 6) in cancellation of outstanding obligations of contracts, etc., settled (column 5).
Formal.....	19,297	\$2,199,412,971.49	18,558	\$1,433,115,254.96	\$170,997,378.09	11.9	\$46,231,774.20	\$1,263,117,876.87
Informal.....	7,511	1,757,865,965.17	5,620	1,227,554,434.89	170,574,689.57	13.9	120,693,356.06	1,066,979,748.32
Total.....	26,808	3,956,808,936.66	24,178	2,660,669,689.85	341,572,067.66	12.8	166,925,130.26	2,319,097,622.19

! These amounts have been approved for payment on the remaining contracts and agreements now in process of settlement or adjustment.

! Under act of Congress of Mar. 2, 1919.

! In addition there are 1,213 claims upon which relief has been denied.

EXHIBIT 2.
Operation cost of War Department Claims Board, and all subsidiary boards, with ratio of cost to amounts involved in settlements effected.

1	2	3	4	5	6	7	8
	Operation cost of War Department Claims Board and subsidiary boards.	That portion of obligation at time of curtailment which relates to contracts and claims settled.	Percentage of operation cost of Claims Boards (column 2) to outstanding obligations under contracts and claims settled (column 3).	Savings effected by final payments approved in cancellation of outstanding obligations of contracts and claims settled.	Percentage of operation cost of Claims Boards (column 2) to savings effected by final payments (column 5).	Amount approved for payment in partial and final settlement.	Percentage of operation cost of Claims Boards (column 2) to amount approved for payment in partial and final settlement (column 7).
14 months, up to Feb. 28, 1920 ¹	\$9,498,644.83	\$2,468,104,158.41	<i>Per cent.</i> 0.38	\$2,164,238,874.85	<i>Per cent.</i> 0.44	\$394,005,662.24	<i>Per cent.</i> 2.41
Month of February, 1920 ²	446,457.64	252,287,049.46	.18	220,162,336.64	.20	25,651,502.76	1.74

¹ The sum of columns 5 and 7 does not equal column 3 for the reason that column 7 includes partial payments.

² The sum of columns 5 and 7 does not equal column 3 for the reason that partial payments were made during 1919 and January, 1920, on contracts and agreements which were finally settled during this month and are, therefore, not included in the amount approved.

EXHIBIT 2-A.

Operation cost of War Department Claims Board and all boards under its jurisdiction for the month of February, 1920.

	Commissioned and civilian personnel.		Office rentals and other overhead.	Other expenses entering into claims.	Total.
	Salaries.	Traveling expenses.			
1. War Department Claims Board.....	\$31,331.83	\$2,201.35			\$33,533.18
2. Air Service Claims Board.....	38,223.42	1,633.71	\$1,000.00	\$840.72	41,697.85
3. Board of Appraisers.....	11,495.83	872.74		678.83	13,047.40
4. Board of Contract Adjustment.....	50,366.11	976.27		11,467.17	62,809.55
5. Construction Claims Board.....	585.06	16.05		220.14	821.25
6. Chemical Warfare Service.....	701.67	96.41		1.02	799.10
7. Engineer Claims Board.....	400.00	47.32			447.32
8. Ordnance Claims Board ¹	218,552.51	10,676.02	12,435.15	29,676.63	271,340.31
9. Purchase Claims Board.....	9,160.48	146.34		20.00	9,326.82
10. Signal Corps Claims Board.....	1,159.79				1,159.79
11. Transportation Claims Board.....	10,986.67			488.40	11,475.07
Total.....	372,963.37	16,666.21	13,435.15	43,392.91	\$ 446,457.64

¹ For details, see Exhibit A, attached.

² Total operating cost of all claims boards for the month of February, 1920, is \$446,457.64.

A. The outstanding obligations at the time of curtailment of such contracts and agreements which were settled during February, 1920, is \$252,257,049.46, of which the total operating cost is eighteen one-hundredths of 1 per cent.

B. The amount approved by said boards in both partial and final settlements and awards is \$25,651,502.79, of which the total operating cost is seventy-four one-hundredths of 1 per cent.

C. The savings effected by final payments approved in cancellation of outstanding obligations settled during February, 1920, is \$220,162,336.64, of which the total operating cost is twenty one-hundredths of 1 per cent.

NOTE.—The sum of B and C does not equal A for the reason that partial payments were made during the year 1919 and January, 1920, on contracts and agreements which were finally settled during February, 1920, and are, therefore, not included in the amount approved.

EXHIBIT A.—Ordnance claims boards.

	Commissioned and civilian personnel.		Office rentals and other overhead.	Other expenses entering into claims.	Total.
	Salaries.	Traveling expenses.			
1. Washington Board.....	\$37,596.28	\$981.56		\$217.23	\$38,794.07
2. Boston, Mass.....	14,981.81	220.21	\$912.92	1,759.51	17,874.45
3. Bridgeport, Conn.....	6,166.28	406.30	344.08	1,726.66	8,643.22
4. Chicago, Ill.....	36,196.94	1,986.24	901.00	6,829.80	45,913.98
5. Cincinnati, Ohio.....	10,318.76	1,451.65	475.00	3,834.43	16,080.14
6. Cleveland, Ohio.....	23,792.79	1,182.00	1,804.07	1,610.11	28,188.97
7. Detroit, Mich.....	15,468.57	375.47	1,210.00	3,476.87	20,530.91
8. New York, N. Y.....	33,008.95	921.76	2,918.63	5,004.39	41,848.83
9. Philadelphia, Pa.....	38,744.18	1,997.34	3,774.40	4,089.80	48,605.72
10. Pittsburgh, Pa.....	1,055.00	148.98		500.00	1,703.98
11. Rochester, N. Y.....	1,517.73	581.41	104.12	108.48	2,511.74
12. Rock Island Arsenal.....	163.33		50.00	26.59	239.92
13. St. Louis, Mo.....	5,506.70	337.16	140.93	364.25	6,352.07
14. Toronto, Canada.....	35.00			65.00	100.00
15. Watertown Arsenal.....	1,004.19	82.74		63.48	1,150.41
Total.....	218,552.51	10,676.02	12,435.15	29,676.63	271,340.31

EXHIBIT 3.

Report of civilian personnel employed in connection with the work of the War Department Claims Board at compensation of from \$50 to \$75 per diem.

Name.	Designation.	Rate per diem.	Duties.
Goodrich, E. P.	Special technical adviser	\$75	Chairman plant valuation group, with headquarters in New York City. Charged with valuation of certain plants throughout the United States used or constructed for the manufacture of munitions, the value of which must be determined in the settlement of claims. Employed only a few days each month.
Lacombe, Henry	Special adviser to Secretary of War upon appeals from Board of Contract Adjustment.	75	Consulted in New York from time to time in connection with appeals made direct to the Secretary of War from decisions of the Board of Contract Adjustment. Ex-Judge, United States circuit court of appeals.
Dorr, G. H.	do.	50	Consulted in New York from time to time in connection with appeals made direct to the Secretary of War from decisions of the Board of Contract Adjustment. Formerly Assistant Director of Munitions and acting chairman War Department Claims Board.
Ennis, W. D.	Special technical adviser	50	Employed from time to time in the investigation of intricate claims of a mechanical nature requiring technical advice. Engaged only a few days each month.
Goodale, R. C.	Special adviser to Secretary of War upon appeals from Board of Contract Adjustment, and member War Department Claims Board	50	In active charge of appeals from the Board of Contract Adjustment made direct to the Secretary of War; also member War Department Claims Board.
Hixon, A. W.	Special technical adviser	50	Technical investigation of chemical claims. Employed only a few days each month.
Lehman, Herbert H.	Special adviser to Secretary of War upon appeals from Board of Contract Adjustment.	50	Consulted in New York from time to time in connection with appeals made direct to the Secretary of War from decisions of the Board of Contract Adjustment. Formerly lieutenant colonel and assistant to Director of Purchase, Storage and Traffic, and member War Department Claims Board. Appointed at \$50 per diem, but has declined to receive compensation.
Marsh, Robert McC.	Special technical adviser	50	Special member War Department Claims Board for Air Service. Averages 3 days per week.
Neville, Charles.	do.	50	In charge of all matters of accountancy and audit in the investigation of claims.
Rogers, Fred E.	do.	50	Consulted and employed on claims involving extensive engineering or mechanical features. Engaged only a few days each month.
Scott, Campbell.	do.	50	Member War Department Claims Board and Chief of Technical Section. Engaged on claims involving engineering and salvage problems.

SURPLUS SALES DIVISION.

Gen. LORD. In the Book of Estimates there is a mistake in the printed estimate submitted which was \$500,000 instead of \$400,000 as given. To the estimate there should be added the \$200,000 asked for by Mr. Fairbanks.

Mr. FIELDS. That would make \$700,000?

Gen. LORD. Yes, sir; the Director of Sales asked for \$400,000. Mr. Morse, the Director of Sales, is prepared to make a statement.

The CHAIRMAN. Is that included in this?

Gen. LORD. Yes, sir.

The CHAIRMAN. The \$500,000, as I understand, is \$100,000 for contingencies of the Army, and the other \$400,000 for the Office of the Director of Sales.

Mr. McKENZIE. And prior to the war that ran around about \$25,000?

Gen. LORD. In 1917 it was \$25,000.

The CHAIRMAN. We will be glad to hear from Mr. Morse. Mr. Morse, will you kindly give to the reporter your full name and title?

STATEMENT OF MR. E. C. MORSE, DIRECTOR OF SALES, WAR DEPARTMENT.

Mr. MORSE. You are all familiar to a certain extent with the problem that faced the War Department in the disposition of the surplus material on hand after the armistice. You know that there was organized a branch of the Purchase, Storage and Traffic Division of the General Staff, known as the Director of Sales Branch, for control and administrative purposes, and the Office of Director of Sales functions not only under the Director of Purchase, Storage and Traffic, but is in constant contact with Mr. Crowell, Assistant Secretary of War, and in many instances direct contact with the Secretary of War.

The CHAIRMAN. Purchase, Storage and Traffic?

Mr. MORSE. Yes, sir; the organization of the War Department for the disposition of surplus property acquired for the war purposes is divided into two parts; one, the central office of the Director of Sales, and the other operative sales units, which are a part of each individual bureau or particular service having a surplus for sale. Under the Director of Sales we have tried to centralize the control of the sale of all of the property, determine policies to be applied by all of the various bureaus, and coordinate their sales activities. We have developed a small personnel to study the problems facing the War Department in the disposition of its surplus, both as to markets, the prices to be obtained, and the methods to be employed in its sale, and the uses to which the material could be put.

We have centralized the publicity and the advertising of the surplus property in order that there would not be publicity issued which was conflicting to the general policies of the War Department, and we have centralized our activities in advertising so that there would not be duplication of the advertising, and have carried on campaigns to stimulate the sales in the various bureaus of the War Department. The War Department has also asked the Director of Sales to set up a unit of control to handle departmental transfers under various acts which have been passed by which, either with or without funds, War Department property is transferred to other governmental departments, and we have acted in this capacity for the last few months, centralizing the control and providing for the distribution and transfer of this property. This unit handles from 90 to 250 requisitions daily.

We have endeavored to give anyone who is not familiar with the methods and activities of the War Department in sales of surplus prompt information by means of a sales information service.

In the Director of Sales office is handled practically all sales of property to foreign countries, except such sales as were made under United States Liquidation Commission.

We have worked in close cooperation with the Department of Military Intelligence to assist them in every way possible to protect the Government against frauds in the sale of surplus property, of which there has been more or less evidence at certain times.

The functions of the bureaus and the Director of Sales office are these: It is the function of the bureau to supply a monthly inventory of the surplus available for sale in that bureau and this inventory is used in working out plans and policies for sales as well as matters in connection with interdepartmental transfers.

A bureau, as soon as it is ready to sell, sends in what we term "a clearance request," with recommendation as to how they want to sell the article. The office of the Director of Sales studies the proposition and makes certain recommendations, approving or disapproving the bureau's recommendation, and then, if clearance is granted, the bureau actually consummates the sale, except in certain instances, delivers the material and collects the money, deposits the funds in the Treasury, and makes report to the Director of Sales of the completed sale. I want to bring out that the Director of Sales can only function after the Regular Army Establishment has declared material surplus. We have no control over the declaration of the surplus. I bring that out because that is one of the reasons why an appropriation is necessary for the next fiscal year. The problem we are facing is undefined as to extent at the present time, due to the fact that although we know there is going to be a large additional surplus declared it is a physical impossibility for a complete declaration to be made at this time. For instance, in the Quartermaster General's Department they have millions of yards of Melton cloth, olive-drab uniform cloth. You are all aware that during the war uniform cloth was purchased practically from any and every one who could make such cloth, and they had any number of shades and apparently any number of grades. The Quartermaster General has picked certain shades and grades which he would like to keep, but it means a physical inspection of the whole lot that was purchased by a specialist in order to select the lots that should be kept and the lots to be declared surplus, and in that instance alone it will probably be four or five months before they are in a position to make final declaration of the surplus.

The CHAIRMAN. Can you give the committee any idea of the quantity of cloth to be inspected?

Mr. MORSE. The figures that I could give now would have to be from memory, but I will answer that question in the record.

NOTE.—Fifteen million yards of 16, 18, 20, 22, 28, 30, and 32-ounce melton cloth on hand March 1, 1920, in War Department.

Mr. MCKENZIE. Was not this cloth all inspected when it came in?

Mr. MORSE. It was accepted but not marked as to the grading of color or quality of cloth. Cloth was accepted that they would not use during peace time.

Mr. FIELDS. That inspection is to determine what they want to keep?

Mr. MORSE. Yes, sir; they are picking out what they want both as to color and grade.

Mr. FIELDS. And the proposition of the department is to keep a supply on hand for an instant emergency?

Mr. MORSE. They are going to keep a certain supply on hand for uniforms and for emergencies. The quantity they keep on hand I can not tell anything about as I have nothing to do with the figuring of the requirements.

The CHAIRMAN. Prior to the war we had been building up a reserve of clothing, shoes, rifles, and other commodities used by the soldiers, and I presume the policy of the department is to continue to hold a certain amount of this material for reserve. Is that your understanding?

Mr. MORSE. That is my understanding.

The CHAIRMAN. How large an establishment have you at the present time?

Mr. MORSE. The personnel of the Director of Sales reached a maximum about a month after I became Director of Sales.

The CHAIRMAN. That was when?

Mr. MORSE. I became Director of Sales on October 22, 1919, on the resignation of Mr. Hare on account of illness. About a month later the Director of Sales' office reached a personnel of 182, with a pay roll of approximately \$35,000; the personnel as of March 24 had been reduced 27 per cent, or to 132, and the pay-roll 23 per cent to \$27,000 in round figures. In addition to that there has been, and is now, an overseas office which originally consisted of 27 people; in October, when I took over the work, it consisted of 19 people, and on March 23 consisted of 5, and 4 of the 5 are sailing from Belgium to-day on their return. The overseas organization is closed up with the exception of one man whose pay will not come out of the contingencies but out of the proceeds of the sales of machinery and tools to Belgium and to France; there has to be some representative of the War Department there in connection with the final adjustment of these sales.

The CHAIRMAN. Do you expect to reduce the personnel of your department?

Mr. MORSE. I have in front of me now, 16 resignations; I can not reduce, if the work is to continue with the volume that is in sight, materially below that point for some little time to come. The question of how much surplus is to be sold is a problem which has given me a great deal of concern. A year ago a guess was made that there would be \$2,000,000,000 worth of material in the United States to be sold. That was a pure guess. In October, after nearly a year of operation, the best estimate which could be obtained on the basis of what was declared surplus and in sight was one and a half billion. We have, to date, actually disposed of or have available for disposition \$1,900,000,000. Within the last month we have added to our declared surplus over \$300,000,000 of material that had never been declared as surplus before.

The CHAIRMAN. Is that included in the \$1,900,000,000?

Mr. MORSE. It is because I have these figures up to date. In talking with Mr. Crowell yesterday he wanted me to tell you that in the inventory of the War Department, which will be completed between now and June 1, there will undoubtedly be turned over for sale an additional surplus; he does not know how much. The requirements of the Army had been figured up, until the last few weeks, on the basis of an Army of 500,000, and are now being figured on an Army of 300,000. The probability is that there will be a proportionate

added surplus turned over for sale by reason of such reduction. I wish I could tell you more accurately what the problem is that is ahead of us. I wish I knew, because if I did I could lay out my sales policy with that in mind and clean up in a certain period of time.

The problem that has been and is now before us is this: We have always in front of us the fact that we are liquidating probably the biggest enterprise ever known in the world of its kind; the property of 110,000,000 stockholders, if I may use that expression, and it is the duty of the War Department to return to these stockholders as large an amount as possible, consistent with the policy of the Government.

Keeping that in mind and also keeping in mind the fact that both Congress and the administration are interested in the question of the high cost of living, certain policies have been worked out, as follows: We have issued orders that all subsistence and certain items of clothing and equipage will be sold as nearly as practicable direct to the consumer, and keeping that in mind we first worked for months to get community organizations to sell the materials for us.

That was slow work, but we were finally successful in distributing nearly \$9,000,000 worth in that way, and we then tried, at the suggestion of Congress, a combination of parcel-post sales through the Post Office Department, moving about \$2,000,000 worth, but found that the mechanism of neither department was adapted for a mail-order business. A policy was then adopted of establishing and opening retail stores for items which could be handled in that way, and some thirty-odd stores were opened and have been running since the latter part of September. The last report of the day before yesterday showed something over \$30,000,000 worth had been disposed of in this way; the prices established being (as nearly as possible) on the basis of 20 per cent below ordinary retail market prices. These stores have been operated at a direct cost to the Government of less than 10 per cent, and we have sold through these stores over 90 per cent of the items put on sale. The time is now at hand when they must be closed up on account of the increase of cost and the decrease in the items salable in that way.

Other than these items it is the policy to sell everything in this country that we can find a market for here. It is the policy to sell for cash everything that can be sold for cash, even at some sacrifice in price, below long-term credits. Further than that we have articles which do not have a ready market in this country, such as railroad material which was made for continental standards and can not be used in this country on account of safety methods, gauges, and such things as that; and are offering such items for export sale. These policies have been consistently carried out.

The CHAIRMAN. In that connection I was informed a few days ago that the Navy Department refused to buy some canned food products that were declared surplus by the War Department on the ground that they were not good enough for the Navy; can you tell us something about that?

Mr. MORSE. That, I think, was not in connection with canned food but was in connection with frozen beef.

The CHAIRMAN. That is correct.

Mr. MORSE. The War Department last July had in round figures 65,000,000 pounds of frozen beef in freezers, purchased for shipment overseas, purchased on specifications which had been slightly lowered

from the Army standard in order to get a sufficient quantity. Our records will show that beginning early in July, 1919, this beef was offered to the Navy Department, as we considered they could take a large quantity of it for their use. The Quartermaster General's Office by letter over the Secretary's signature made an offer, and were informed that our frozen beef did not meet the Navy's specifications, and that they were not interested in it. I was not satisfied with that and followed it up, and have a file of correspondence in my office which passed between us, and I am compelled to say to-day that we have sold no frozen beef to the Navy Department. In connection with frozen beef the situation has developed like this: It is going on nine months since it was first declared surplus, but part was afterwards withdrawn from surplus, about 33,000,000 pounds, and we have endeavored through publicity and personal campaign to sell the remaining surplus to the public, but it is frozen beef.

The public is not in the habit of handling frozen beef. It can be handled only in car-load lots and the ordinary butcher can not handle a car-load, neither has he proper facilities for de-freezing. Our efforts also met with a certain amount of opposition and it has been very difficult to sell this beef, although we offered to deliver it in car-load lots to any city in the United States at 20 per cent below that day's Chicago price for similar beef. We have moved and will move in this way in the neighborhood of 11,000,000 pounds which leaves us with something like 20,000,000 pounds surplus. I found that Belgium was buying large quantities of frozen beef and told the Secretary and assistant secretary of War that in my opinion we could not afford to wait very much longer to get rid of this frozen beef, as it was costing us for storage to keep it, and was getting older every day; certain States have laws under which frozen beef can not be sold if it has been in storage over a certain length of time. We have to-day practically completed contracts with the Belgian Government for 25,000,000 pounds at 15 and 16 cents per pound as against 10½ to 11½ cents in this country. I believe if they should decide to turn over to us any further surplus of it we will be able to move the other in the same way. It was not exported, however, and I did not recommend exporting until I was convinced that it was practically impossible to dispose of all of it to the people of this country.

The CHAIRMAN. How much is the Navy paying for its frozen beef?

Mr. MORSE. I have seen a report that it was paying as high as 18 cents.

The CHAIRMAN. What offer did you make to the Navy Department on this?

Mr. MORSE. We never got to the point where they asked us for a price.

The CHAIRMAN. Wherein did they claim it was deficient in specifications as against the beef used by the Navy?

Mr. MORSE. Their principal claim was that it was light weight.

The CHAIRMAN. Did not contain enough fats?

Mr. MORSE. They made the claim that it did not meet the Navy's specifications for beef, principally because it was underweight. If you care, I can submit, either for the record or to you, the complete file of papers which go into detail on the subject.

The CHAIRMAN. I think it would be very interesting to this subcommittee to have an inspection of those letters.

Mr. MORSE. I will send them to you, Mr. Chairman.

Mr. FIELDS. What did this beef cost you?

Mr. MORSE. I have not the figures in front of me, but will obtain them. I presume they were considerably higher. [Average cost 25½ cents.]

Mr. GREENE. You made some mention of Navy specifications as to beef; are they different from the Army with reference to the manner of packing, or is there a difference as to the character of the meat and the quality?

Mr. MORSE. As far as I know they do not differ as to character and quality, except as quality may be a matter of weight.

Mr. GREENE. What I was trying to bring out is that there seems to be instances between departments of the Government that one will decide that they can live on what is rejected utterly by another. I wondered whether that was the question in this thing.

Mr. MORSE. From my personal inspection of the papers that have passed—I am not a meat man and do not know anything about meat except to eat it—their criticism was principally technical.

Mr. GREENE. The point I want to learn is whether the Navy has a standard as to the nutrition of beef which differs from that of the Army.

Mr. MORSE. That is not my understanding.

Mr. MCKENZIE. Is it not a fact that the heavier beef comes from steers, that is, three or four years old and not from cows, heifers, and yearlings, and that the heavier grade is usually higher in price?

Mr. MORSE. That is correct, I believe.

Mr. MCKENZIE. When I used to ship live stock to Chicago market, they had some rule of that kind and you could get better prices for large steers and naturally if the Navy is buying that class of beef they are buying the best beef. I believe that the Army should have just as good beef as the Navy.

The CHAIRMAN. You say you can not inform the committee as to the price the Navy is paying?

Mr. MORSE. I have not exact knowledge as to that.

The CHAIRMAN. Did you make a price to the Navy on this frozen beef?

Mr. MORSE. I do not remember that we ever got so far as to quote a price; the price of beef is a fluctuating price. We told them that if they were interested and would consider a purchase we were positive some mutual arrangement could be worked out as to price.

The CHAIRMAN. And then they informed you that the beef was not up to their standard?

Mr. MORSE. In a letter which was sent to the Secretary of the Navy from the Attorney General I recall a statement he made, that the beef which the Army held was largely corn fed while the beef the Navy was buying was largely grass fed, and it seemed to be his opinion there was something in favor of the Army beef.

The CHAIRMAN. You have a letter from the Attorney General on the subject?

Mr. MORSE. Yes, sir.

The CHAIRMAN. I wish you would submit that letter to the committee.

(The letter referred to is as follows:)

JANUARY 3, 1920.

Hon. JOSEPHUS DANIELS,
Secretary of Navy, Washington, D. C.

MY DEAR MR. SECRETARY: Since our recent conference, at which time you remember the question of frozen meat in storage owned by the Army was taken up, we have been able to dispose of, through the Railroad Administration, certain quantities of this meat, but I understand that the Navy has refused to confirm the same, as a result of a slight difference in the specifications of this meat.

I would like to call your attention to the fact that the only objection that your department has to this meat is in trimming. The Army beef has a special trimming, having the neck off, the foreskin off, kidney suet out, and the shank on the hind quarter off, which is an advantage of approximately \$3 per hundredweight over commercial beef. Furthermore, this beef is corn-fed cattle, while the beef on the present market is grass fed—far inferior to the corn fed. This meat can be purchased at a price far below the price you are paying on the open market to-day.

May I suggest that a slight alteration be made in your specifications that will allow the Navy to purchase this better quality meat at a price materially below what you are now paying, and by so doing would at least cause a marked reduction in the price of certain meats, at least temporarily, that the consuming public might have the benefit of.

We have had quite a complete investigation of this situation, and will be able to supply you with any further information desired.

Very truly, yours,

— — — — —, *Attorney General.*

Mr. McKENZIE. Was there any objection made to this meat on the ground that it had grown stale?

Mr. MORSE. No, sir.

I want to give you in brief the results which have been brought about by the sale of surplus property to date. We have sold, or entered into sales contracts, for material which cost the Government \$1,231,000,000, including in that amount transfers which have been made to other governmental departments, which have enabled them to get along and not purchase the equivalent in the open market. This has given a return of \$866,000,000 or 70 cents on the dollar of cost. Of that amount \$785,000,000 has been sold for cash or transferred to governmental departments which took the place of their expending cash and approximately \$81,000,000 has been sold on credits of three to ten years; practically all secured by Government negotiable bonds.

The CHAIRMAN. Does that \$81,000,000 represent sales principally to foreign Governments?

Mr. MORSE. Principally, in fact almost entirely, because the only other credits we have accepted for any long time, other than commercial credits of 30, 60, or 90 days have been in connection with a few large plants that have been sold where we have accepted 5 per cent notes secured with bonds and mortgages, and these amount to not over 25 per cent of that amount.

Mr. McKENZIE. Does that total represent the sale of equipment in France?

Mr. MORSE. It has absolutely nothing to do with that; this material was all in this country at the close of the war. I would like to offer for the record two photostats which I have here.

(The matter referred to is as follows:)

War supplies located in the United States disposed of under the supervision of the director of sales as of Feb. 13, 1920.

Sales prior to Dec. 1, 1918.....	\$123,000,000	
Cost (estimated).....		\$154,000,000
Return, 80 per cent.		
Sales subsequent to Dec. 1, 1918 (including transfers with funds).....	597,786,000	
Cost.....		879,000,000
Return, 68 per cent.		
Total material sold (including transfers with funds)	720,786,000	
Total cost.....		1,033,000,000
Return, 70 per cent.		
Material transferred without funds to other departments of the Government:		
Transfers reported.....	\$38,000,000	
Transfers authorized but not reported..	28,000,000	
	66,000,000	
Cost.....		86,000,000
Material on which sales contracts have been signed, but not reported in above totals:		
To France (credit).....	\$25,000,000	
To Russian Cooperative Society (credit).....	20,000,000	
To Serbs (credit).....	25,000,000	
To Belgium (cash).....	5,000,000	
To Greece (cash).....	2,300,000	
To Poles (credit).....	2,001,000	
To Spain (cash).....	90,000	
	79,391,000	
Cost.....		132,000,000
Return, 60 per cent.		
Total sales (including transfers with and without funds).....	866,177,000	
Total cost.....		1,231,000,000
Return, 70 per cent.		

NOTE.—The cost of the material sold on credit to various foreign governments or nationals was not available in many cases. It was assumed by this office that the return of said sales would be approximately 60 per cent of the cost of the material. Figuring in this way, the cost, \$132,000,000, hereinbefore set forth, was determined.

Tabulation showing by selling office and by classification of material, total amounts of sales of surplus war supplies, reported to director of sales, Mar. 13 to 19, 1920, also sales to date—Continued.

Classification.	Motor Transport Corps.			Ordnance Department.			Purchase and Storage Service.			Signal Corps.		
	Sale.	Cost.	P. ct.	Sale.	Cost.	P. ct.	Sale.	Cost.	P. ct.	Sale.	Cost.	P. ct.
Subsistence.....				\$844.84	\$6,605.58	13	\$21,713.28	\$19,788.20	110			
Textiles, exclusive of wool.....				142.20								
Wool.....				2,481.39	2,999.36	83	820,425.83	1,229,144.28	67			
Unclassified.....				345.35								
Retail stores.....				11,147.16	59,967.98	19	2,433,903.00	4,388,136.90	55			
Total known cost.....				178,217.06						9.00		
Total unknown cost.....	\$42,220.57	\$265,831.41	14	3,881,840.52	14,419,697.89	27	899,565.77					
Period sales.....	42,220.57			1,759,500.47			3,331,325.78	5,714,949.70	58	2,291.60		
Previous sales:				5,641,340.99			4,230,912.55			2,291.60		
Known cost.....	1,763,896.39	9,895,777.05	18	100,955,359.37	220,444,632.10	46	347,678,761.94	446,306,281.03	78	114,175.52	\$146,039.79	78
Unknown cost.....				26,529,831.57			36,004,439.61			102,577.36		
Totals to date:												
Known cost.....	1,836,106.96	10,181,708.46	18	104,840,199.89	224,864,329.99	45	351,010,087.72	452,021,230.73	78	114,175.52	146,039.79	78
Unknown cost.....				28,289,332.04			36,904,026.38			104,968.96		
Sales to date.....	1,836,106.96			133,129,531.93			387,914,114.10			219,044.48		
Government trans. gratis period.....												
Total.....	24,864,876.54	24,864,876.54		15,331,149.29	15,331,149.29		152,351.51	152,351.51				
							734,476.82	734,476.82				

Tabulation showing by selling office and by classification of material, total amounts of sales of surplus war supplies, reported to director of sales, Mar. 13 to 19, 1920, also sales to date—Continued.

Classification.	Transportation Service.			Total for week.			Total to date.		
	Sale.	Cost.	P. ct.	Sale.	Co t.	P. ct.	Sale.	Cost.	P. ct.
Aeroplanes and equipment.....				84,388.00	\$29,043.17	15	84,724,761.76	\$25,612,027.17	18
Animals.....							26,359.60		
Artillery and artillery ammunition.....				6,772.48	16,304.64	42	21,379,408.98	34,443,404.08	62
Building material and utilities.....				199,862.97	347,862.19	57	1,233,761.63	1,278,460.39	96
Chemicals, acids, and explosives.....				4,210.00			15,808.55		
Clothing and equipment.....				62,976.98	88,008.57	72	2,588,086.80	5,794,741.72	46
Electrical equipment.....				42,928.16			750,245.25		
Ferrous metals, including scrap.....				3,247.92	3,308.65	98	32,434,180.63	35,021,964.76	93
Nonferrous metals, including scrap.....				55,905.97	82,152.58	60	2,107,199.19		
Fuels.....				3,414.76			10,623,788.07	21,819,379.18	49
Hardware.....				1,042,570.73	3,334,585.13	31	2,583,028.77		
Land and buildings.....				1,574,918.92			976,398.20	1,611,588.17	61
Leather.....				1,500,717.68	7,853,016.06	19	202,982.04		
Lumber.....				721,646.24			11,710,179.81	44,165,361.01	27
Machinery and engineering equipment.....				41,300.08	58,045.29	72	6,186,351.60		
Machine tools.....				79,956.86	381,510.93	21	23,287,559.74	43,680,534.34	53
Medical, hospital, and laboratory supplies.....				2,078.61			8,681,501.02		
Motor and miscellaneous vehicles and equipment.....				257,250.00	713,133.30	36	576,260.35	1,209,027.31	46
Nonmetallic scrap.....				3,567.00			54,695.60		
Office and household equipment.....				3,360.47	891.77	40	2,033,995.42	4,330,548.79	47
Oils, greases, etc.....				10,194.65	11,397.01	89	2,399,874.82	70,902,733.82	16
Packing containers.....				42,816.24			4,229,260.36	7,801,421.93	61
				66,461.42			6,345,158.58		
				187,945.35			7,191,199.87		
				670,398.99	1,381,195.29	49	1,606,610.08	3,403,562.06	47
				43,170.50			2,922,421.55		
				43,220.57	298,105.18	14	7,621,773.91	12,118,740.43	62
							7,500,298.11		
							7,794,747.38	13,695,864.06	57
							1,200,964.51		
							5,010,179.37	5,263,734.76	66
							3,157.79		
							3,473,033.61	12,914,450.77	27
							40,580.82		
							120,594.94	1,157,195.58	10
							2,193,897.13		
							3,317,563.48	488,312.76	65
							25,884.39		
							922,850.99	1,206,267.73	71
							601,924.16		
							460,472.17	1,830,613.31	25
							444,551.69		

Tabulation showing by selling office and by classification of material, total amounts of sales of surplus war supplies, reported to director of sales, Mar. 13 to 19, 1920, also sales to date—Continued.

Classification.	Transportation Service.			Total for week.			Total to date.		
	Sale.	Cost.	P. ct.	Sale.	Cost.	P. ct.	Sale.	Cost.	P. ct.
Railway materials.....							\$1,703,427.12	\$2,430,871.80	74
Railway rolling stock.....							26,661.03		
Ships, barges, and floating equipment.....				\$10,000.00	\$22,600.00	44	70,170,697.83	71,554,515.24	98
Small arms and small-arms ammunition.....							180,238.09	254,430.00	74
Substance.....							3,000.00		
Textiles, exclusive of wool.....				1,588.28			35,290.26	35,350.76	99
Trench warfare materials.....				22,558.12	26,363.78	85	7,326,573.12		
Trivets.....				142.20			33,872,942.51	43,924,545.15	77
Wood.....				1,270,944.69	1,751,554.74	73	60,434.98		
Unclassified.....				345.35			82,078,155.36	86,981,504.91	71
Retail stores.....							1,543,465.20		
Total known cost.....							204,292.80	488,653.66	42
Total unknown cost.....							11,709.94		
Period sales.....							241,528.98	255,664.15	94
Previous sales:							229,621,000.83	275,358,936.49	83
Known cost.....	\$188,613.09	\$252,680.00	75				327,311.44	1,080,284.51	30
Unknown cost.....	462.56						660,725.36		
Totals to date:							29,465,476.36		
Known cost.....	188,613.09	252,680.00	75						
Unknown cost.....	462.56								
Sales to date.....	189,075.65						327,473,366.31		
Government trans. gratis period.....									
Total.....				152,351.51	159,351.51				
							41,060,564.79	41,060,564.79	
							868,533,951.10	873,192,226.72	

Note 1. Governmental transfers with funds are considered as sales. Totals to date: Recovery, \$27,919,652.99; cost, \$28,192,337.36; recovery, \$113,064.03; cost unknown.

Note 2. This classification includes much material already used by the Government and sold as second-hand material. The cost shown is the original cost to the Government.

Note 3. Sales reported to Congress, Dec. 2, 1919, amounting to \$123,245,239.47, are not included in the above figures.

Mr. MORSE. There have been a few sales made which are interesting; you have mentioned one, frozen beef. I have mentioned the retail stores which are now about to be closed up, and I might say that it is pretty nearly as hard to close them up as it was to start them.

We have had some interesting experiences; take for instance the sale of the city of Nitro, an uncompleted plant, a city for 22,000 inhabitants; naturally, on that sale our return was low; the sale was made after extensive publicity and the sales contract is being executed by the purchasers in the spirit in which it was entered into. In other words, it was the determination of the War Department that Nitro should exist, if possible, as an industrial community, and there is now at that place a large machine shop, and they are establishing a paper mill which will bring in more people.

There is also a picric acid plant at Brunswick which we sold on a contract giving the purchaser approximately two years to pay for the purchase, dating from last October, and this contract has been entirely completed and the Government has received its entire price.

We have just succeeded in completing the sale of a picric acid plant at Little Rock, which returned about three times the estimated salvage value.

We had the problem of some 10 or 12 million yards of cloth for powder bags, a special silk cloth, and contract has been entered into with the Bush Terminal Co. and McLane Silk Co. which will net the Government cost plus 50 per cent of the profits.

The CHAIRMAN. Have you sold any additional airplanes?

Mr. MORSE. I presume you mean in addition to the Curtiss contract?

The CHAIRMAN. Yes, sir.

Mr. MORSE. There was one contract made with the Nebraska Aircraft Corporation. I can not give you the exact figures offhand as to how many planes or at what price, but will include that in the record.

Two hundred and eighty planes for \$380,000 or \$1,357 plus each.

The CHAIRMAN. You know there was a great deal of criticism about the sale of the airplanes to the Curtiss Co.; was there any transaction since then that will again cause Members of the House to feel that the Government did not secure all that it should have secured for surplus planes?

Mr. MORSE. I do not feel that there is, Mr. Chairman; while we got more money for the planes sold the Nebraska people, the number was comparatively small. Also, England has had considerably difficulty in disposing of its planes. It may be interesting to the committee to know that England is organizing a drive on the United States for the disposition of her surplus. If you will recall the figures I just gave you and compare them with sales England has made, you would find that England has not sold material in excess of \$10,000,000 and has not realized 50 per cent on the dollar for that amount in spite of the enormous sales organization put together over there.

The CHAIRMAN. Do you refer only to sales of aircraft?

Mr. MORSE. To sales of all surplus material in England. They are now organizing a drive in this country, making use of a special train.

The CHAIRMAN. Will they be able to bring their material into this country without the payment of duty?

Mr. MORSE. I do not suppose so.

Mr. McKENZIE. What action have you had in the sale of breast-collar harness?

Mr. MORSE. There is a report on my desk now that we have sold in the neighborhood of 30,000 sets.

Mr. McKENZIE. The harness I had in mind is artillery harness.

Mr. MORSE. The last figures submitted to me included the sales I have just mentioned, and showed 160,000 sets that were to be sold; and in addition to that there are parts on hand for 70,000 sets more. I have recently had a study made of the situation and made a report to Mr. Crowell on it, and we are trying to work out a method of sale for that harness whereby the Government will receive a reasonable return. It is going to be very difficult, and the harness must be converted before it can be used in general. The War Department is not in a favorable position to-day to do that converting itself, and it is difficult to get the harness manufacturers to take this, because they are not particularly keen for doing that work. I have two or three prospects which look very good.

Mr. McKENZIE. To my mind that harness proposition strikes me as one of the most preposterous blunders that perhaps was made during the war. There is absolutely no use or no demand for that character of harness except for artillery and I can not understand it except in one way; that an officer in making the contract probably got down 10,000 sets and the manufacturer read it 100,000 or 200,000. I understand that the War Department tried to get rid of them through Sears, Roebuck & Co., and they made an effort but could not get rid of them.

The CHAIRMAN. Of course, when the War Department negotiated this contract nobody could tell when the war was going to end, and if the War Department had not been able to furnish them when needed the War Department would have been subjected to severe criticism.

Mr. FIELDS. How did the price received from Nitro compare with the salvage value?

Mr. MORSE. Assuming that we obtained, and I have no reason to doubt that we shall obtain, the extra \$1,500,000 that should come to us in addition to the basic contract price, it will probably be approximately \$10,000,000, and about twice the estimated salvage value.

Mr. GREENE. What do you find among the obstacles you run up against in returning this surplus to ordinary business demands, the fact that many of the things you are now trying to dispose of were made especially for the Army would interfere, would it not?

Mr. MORSE. That is a very hard problem; for instance, 1,000,000 tubes of sag paste, that they smeared on the boys for mustard gas, cost us 10 to 15 cents per tube; we started in with an offer of a half cent per tube and now have it up to 5 cents, but are still working on it.

Mr. FIELDS. What will it be used for now?

Mr. MORSE. Somebody is going to convert it for some use; you may be using it for shaving one of these days.

The CHAIRMAN. You are now getting 5 cents per tube where ordinarily you would have to sell it for one-half cent per tube?

Mr. MORSE. Yes, sir.

Mr. GREENE. That is more or less characteristic, is it not?

Mr. MORSE. Yes, sir; picric acid, for instance, they use it in dyes but we have enough dyes to dye the world several times. That is

being experimented upon by a number of people. We had carbolic acid, something in excess of four years' supply normal production, and normal production going on just the same.

The CHAIRMAN. It went up during the war, even in the drug stores, did it not?

Mr. MORSE. Yes, sir.

The CHAIRMAN. Is the supply so far behind at the present time that you can not get what you were able to get for it when the Government purchased?

Mr. MORSE. I have not the cost figures here.

Mr. GREENE. When this same matter was under discussion early in the work of your bureau the question as to the adaptability of Army food supplies to ordinary commercial purposes was quite important. What do you find by your experience?

Mr. MORSE. Take the question of bacon; we were absolutely fooled on the statement that the American people would not eat the fat, heavily smoked and salted Army bacon, but we have sold large quantities of that bacon to people in this country from our retail stores.

We have run into a little question as to how much surplus of canned meats of all kinds there is. The records were in such shape that it was found necessary, last December, to withdraw all declarations of surplus and start over again, and they have not completed the final records yet. We have found, however, that we are not going to sell in this country at, I believe, any price, canned roast beef, canned corned beef, particularly in the larger sizes, and the canned corned beef hash in the larger size.

Mr. GREENE. Is it a matter of the size of the container that largely enters that problem?

Mr. MORSE. In the hash, apparently, and to a certain extent in corned beef. The 6-pound cans of that class material is larger than we can get the householder to buy. We can sell a little of it to hotels and restaurants, but the tentative figures that I had the other day were 24,000,000 cans, I believe, No. 1, of roast beef that was going to come over for sale, and canned roast beef will not sell in this country.

Mr. GREENE. Do you run against the proposition that the character of the meats or provisions is itself not adaptable to household and commercial purposes, or is it largely in the manner of their being put up?

Mr. MORSE. It is principally in the fact that they are canned. I will say this, and I want to make it very emphatic, that in all the \$30,000,000 we have sold there has been practically no complaint as to quality. In fact, I have not heard a single complaint from any individual purchaser that the food was spoiled or not fit to eat. They may not have liked the character of it, but invariably the reports are that it was good food.

Mr. GREENE. So that as far as its being wholesome or nutritious is concerned, that is not in dispute at all?

Mr. MORSE. Not at all.

Mr. GREENE. And it is only a question of its adaptability to household use?

Mr. MORSE. And the familiarity of the people in this country with it, or the desire of the people in this country to eat that kind of food.

The CHAIRMAN. About how much of the bacon have you left?

Mr. MORSE. The reports that I have, dated February 29, only showed a million pounds, but we have there again a difficult situation in bacon, and the Quartermaster General tells me that it will be some time before he has this straightened out. They have mixed in with their total bacon a class of bacon known as clear backs, if I recall correctly, which they do not care to have. They took it in the war because they needed all the fat bacon they could get. The Quartermaster General desires to cull that out and sell it, rather than keep it in with the other bacon. Another reason for that is that this clear fat bacon, which is what it is, is more apt to spoil if it is retained in storage than the other bacon, and it is my opinion that we will have several million pounds of bacon yet to dispose of.

The CHAIRMAN. Will it be any trouble for you to prepare a list of food products that you still have on hand which have been declared surplus?

Mr. MORSE. I can not give you now a list of food products, as I asked yesterday, after Gen. Lord told me that the hearings were to start, for that information, and I found that the reports had not yet been completed and consolidated in the Supply Division of the Quartermaster General, and that the reports had not reached my office as to what would be surplus. I think I can get that and put it in the record within the next two days. I could not get that this afternoon.

The CHAIRMAN. I will appreciate it if you will do that.

(The matter referred to is as follows:)

Food stocks surplus as of Mar. 15, 1920.

Beef, fresh, frozen.....	\$10,183,169
Bacon and ham.....	12,722,703
Beans, dry.....	3,975
Bread, hard.....	601,955
Canned beans.....	102,649
Canned meats.....	27,763,329
Canned fish.....	85
Canned fruits.....	192,520
Canned soup.....	6,014
Canned vegetables.....	2,746,767
Candy.....	11,619
Coffee, tea, spices.....	87,503
Cocoa, chocolate.....	61,159
Flour and meal.....	68,756
Fruit, dried.....	1,088,026
Milk.....	17,490
Mutton, fresh, frozen.....	185,763
Matches.....	85,287
Pork, fresh, frozen.....	1,103,414
Poultry.....	758,272
Pickles and vinegar.....	204,222
Miscellaneous.....	1,212,669
Butter and cheese.....	27,967
Forage.....	600

Mr. GREENE. At the time this matter was under discussion here before there was some doubt as to whether the character of the heavy Army shoes would be an objection to their resale for commercial purposes. Did you find some outlet for them finally?

Mr. MORSE. New shoes have only within the last month been declared surplus and available for sale. That has been held up, as I am informed, while I have nothing directly to do with that end of it, due to the fact that there was a question as to whether they would

keep the so-called barrack shoe and the field shoe or marching shoe as two distinct shoes or consolidate into a new type of shoe which would be used for both purposes. They finally decided upon the latter course, and having reached a point where they were reasonably sure as to the number of pairs of shoes they had to turn over to discharged soldiers to equip them with a good pair of shoes, a declaration of surplus has just recently been made which will reach in the neighborhood of a million and a half to two million pairs.

On the reclaimed shoes, it depends on the location. There has been quite a considerable demand for reclaimed shoes, particularly in mining regions and steel-mill regions. I am not prepared to say whether we will be able to sell this heavy field shoe, which is the one that is going to be declared surplus, in this country or not. We should be if we can only convince the workingman that he has got a wonderful bargain in that shoe. It is a very high-grade shoe. Montgomery Ward has been putting out a workingman's shoe at \$4.50, which they sell in large quantities. The cheapest of these shoes cost the Government \$4.50, and from that up to \$7 and over.

Mr. GREENE. It was then suggested, this shoe, being unusually heavy and cumbersome, so far as the every-day habits of our workingmen were concerned, that there possibly might be some objection to getting rid of them unless they were educated to understand their great value.

Mr. MORSE. Personally, I propose to run a publicity or educational campaign, if possible, in districts where they should be sold.

Mr. GREENE. And the question of boots, I suppose, comes in under the same general head, rubber boots?

Mr. MORSE. No, they have practically all been disposed of. All the rubber ware is practically gone now.

The CHAIRMAN. What are you asking for these shoes?

Mr. MORSE. We have been asking two prices, based on the cost, the average cost, as near as we could get it, and on the shoe of which we have the largest quantity, I think it was slightly over \$7 retail.

The CHAIRMAN. And the other shoe, the \$4.50 shoe?

Mr. MORSE. There are very few shoes that cost the Government \$4.50 in this lot. The average was nearer \$6.50 or \$7. Now, if I may give you a little idea of what we have used, and how we have used the money you appropriated last year—

The CHAIRMAN. I was going to ask you to segregate the \$400,000 that you are asking for this year, but the use of the money that we gave you last year would also be very helpful.

Mr. MORSE. The Secretary had allotted to the Director of Sales out of the \$1,000,000, \$600,000. As far as my office is concerned, I will return out of that allotment, \$100,000.

The CHAIRMAN. So that you were able to run your office for \$500,000?

Mr. MORSE. Yes; \$150,000 of that has been or will be used in connection with the overseas party, and the remainder used directly in connection with my own office.

With reference to that, I want to call attention to this, that on July 19, 1919, we had in our office 27 commissioned personnel. They were gradually reduced until on November 1, I only had two, and now I only have one, so that, as I mentioned a minute ago, the monthly pay roll of the Director of Sales's office to-day is \$27,000, but we can

reduce that some more. Not anything like the proportion I have reduced it since last November, until we have reached the point where I am practically sure of the material that is going to be declared surplus and the problem that is in front of us.

Mr. GREENE. Did they charge off to your overhead the salaries of the commissioned officers of the Army?

Mr. MORSE. No; they did not.

The CHAIRMAN. We appropriated, as I recall, for this purpose last year, \$900,000. Do you know what became of the other \$300,000?

Mr. MORSE. Only in a general way. I think Gen. Lord's department could give you those figures much better than I can.

Gen. LORD. The total expenditures I submitted, as required by law, in this document 440, House of Representatives, Sixty-sixth Congress, second session.

The CHAIRMAN. Then will you tell us how you propose to proportion the \$400,000 you are now asking for?

Mr. MORSE. That, Mr. Chairman, is going to be pretty difficult, because I do not know just what the problem is going to develop into. The present organization consists of the director of sales, a first assistant director of sales, three assistant directors of sales, and several section chiefs and commodity chiefs. The amount asked for will be practically all used, or 90 per cent of it, at least, in salaries of that office. I do not believe personally, unless there is a decided change in the program, that quite \$400,000 will be required next year. That estimate was made some months ago. I have been able to bring about certain economies in the organization, but I am perfectly frank to admit that I do not know what is going to be required; I do not know what the problem is going to be, and will not until the inventory is completed and consolidated against the new requirements, in order to determine what there is to be released as surplus. I will say that I am now having a very difficult time holding what organization I have together. I have lost in the last week four men that I will not be able to replace at the present time.

The CHAIRMAN. That inventory you speak of will be ready about when?

Mr. MORSE. Well, I doubt if we could get that inventory, with the requirements against it, prior to the 1st of July.

The CHAIRMAN. At the beginning of the next fiscal year?

Mr. MORSE. Yes.

The CHAIRMAN. So that your organization will depend largely upon that inventory and what it discloses?

Mr. MORSE. Yes; except that there is in front of us right now about \$630,000,000 that we can see that has got to be moved. Of course, I feel, Mr. Chairman, this way, that our organization, in a sense, should not have to be paid out of appropriations, because we are bringing money in, and it seems too bad that the expenses can not be paid out of the money that is brought in, rather than appropriating new money.

The CHAIRMAN. Well, the Congress many years ago decided that it was better to appropriate all amounts required for running any given department and let the money received as proceeds from sales be deposited in the Treasury as "miscellaneous funds," or under some such designation.

Mr. MORSE. I have here a chart which I prepared, which I think you will be interested in, for the calendar year of 1919. We have

been asked a good many times how our organization compared to a commercial organization in cost. Taking the figures of 1919, and obtaining the salaries of all the personnel both in my office and in the bureaus we have engaged in this work, and comparing them to the receipts or the sales made showed a selling expense of 1.03 per cent. Our own office only cost fifty-seven one hundredths of 1 per cent, a pretty small amount to find. I could not get the total selling expense, for the reason that the method employed in the War Department of keeping books, including telegraph, traveling expenses, warehousing, and shipping costs, and things like that. I have, however, items of salaries and of receipts in each bureau. In two instances I have total expenses.

I compared the above against confidential reports which I obtained from a large number of representative commercial and industrial concerns, including iron and steel products, iron and steel scrap, lead, machinery, castings, automobiles, electrical machinery and supplies, rubber, wool, clothing, silk goods, hardware, fire arms, groceries, meat products, etc., which aggregated, all put together—and they were the largest representative concerns of the country—about \$1,000,000,000 of sales for the year 1919, and their ratio of salaries to sales averaged 2.64 per cent, and ours, as I mentioned, was 1.03 per cent. One of the largest steel concerns doing business of about \$500,000,000, showed a ratio of salaries to receipts of 1.15 per cent. We have made 60,000 sales at an average sale of less than \$4,000. That does not count in the individual sales made through retail stores. That is counting the retail stores as one sale.

(The statement referred to is as follows:)

Sales expenses, office of Director of Sales and all War Department bureaus, period Jan. 1 to Dec. 31, 1919.

Totals:	
Receipts—	
General.....	\$315,015,500
Wool.....	211,014,500
Transfers with funds.....	26,718,000
Transfers without funds.....	53,574,000
Total returns property disposed of.....	606,322,000
Total salaries.....	6,234,400
Ratio:	
Salaries to receipts.....	per cent.. 1.03
Director of Sales office:	
Total salaries.....	\$350,000
Total receipts.....	606,322,000
Ratio:	
Salaries to receipts.....	per cent.. 0.0577

	Purchase and Storage.	Ordnance.	Air Service.	Engineers.
(a) Sales receipts, Jan. 1 to Dec. 31, 1919:				
General.....	\$137,330,600			
Wool.....	\$211,014,500			
Total.....	\$348,345,100	\$105,764,000	\$18,677,500	\$73,911,200
(b) Salaries of commissioned and civilian personnel in field and Washington offices.....				
	\$2,756,800	\$2,122,000	\$455,600	\$18,350
(c) Ratio:				
Salaries (b) to receipts (a)..... per cent..	0.79	1.98	4.6	0.02
(d) Other miscellaneous sales expenses¹.....				
	\$1,042,400	(²)	\$1,287,000	(²)
(e) Total sales expenses.....				
	\$3,799,200	(²)	\$2,142,600	(²)
(f) Ratio:				
Total sales expenses (e) to sales receipts (d), per cent.....	1.1	(²)	12.5	(²)

¹ One sale consummated by Engineers amounted to approximately \$70,000,000.

² Miscellaneous expenses of Air Service include telephone and telegraph, civilian and commissioned traveling expenses, office and warehouse rent, warehouse labor, and other miscellaneous, and includes expenses other than sales, estimated about one-half of total. Miscellaneous expenses of surplus property include general operating expenses, telephone and telegraph, postage, traveling expenses, rent in some zones and retail stores, advertising.

³ Not available.

Sales expenses, office of Director of Sales and all War Department bureaus, period Jan. 1 to Dec. 31, 1919—Continued.

	Signal Corps.	Construction.	Motor Transport.	Chemical Warfare Service.
(a) Sales receipts, Jan. 1 to Dec. 31, 1919:				
General.....				
Wool.....				
Total.....	\$145,000	\$3,785,000	\$1,098,000	\$1,023,500
(b) Salaries of commissioned and civilian personnel in field and Washington offices.....	\$24,000	\$10,500	\$2,150	\$18,500
(c) Ratio:				
Salaries (b) to receipts (a)..... per cent.....	16.5	0.26	0.2	1.8
(d) Other miscellaneous sales expenses ¹	(2)	(2)	(2)	(2)
(e) Total sales expenses.....	(2)	(2)	(2)	(2)
(f) Ratio:				
Total sales expenses (e) to sales receipts (a), per cent.....	(2)	(2)	(2)	(2)

¹ Miscellaneous expenses of Air Service include telephone and telegraph, civilian and commissioned traveling expenses, office and warehouse rent, warehouse labor and other miscellaneous, and includes expenses other than sales, estimated about one-half of total. Miscellaneous expenses of surplus property include general operating expenses, telephone and telegraph, postage, traveling expenses, rent in some zones and retail stores, advertising.

² Not available.

NOTE.—Reports from commercial industrial concerns, including iron and steel products, iron and steel scrap, lead, machinery, castings, automobiles, electrical machinery and supplies, rubber, wool, clothing, silk goods, hardware, firearms, groceries, meat products, etc., show:

Ratio of salaries to receipts from 0.6 to 6.8 per cent; average, 2.64 per cent on total yearly sales of \$979,900,000; total yearly salaries of \$25,338,000.

Ratio of total expenses to receipts, average 6.7 per cent; average yearly business varying from \$500,000 to \$500,000,000; total yearly sales, \$1,782,000,000; total yearly expenses, \$119,483,000.

NOTE.—Ratio of salaries to receipts, 1.15 per cent, shown by steel products concern doing yearly business of \$500,000,000.

NOTE.—Engineers, Construction, and Motor Transport Corps maintain no sales personnel in the field.

Mr. GREENE. How far can that percentage go, starting from a common basis? You have got to compare only with industrial and commercial concerns that have a distinct overhead for selling purposes alone, have you not?

Mr. MORSE. Yes.

Mr. GREENE. Because that is exactly what this is?

Mr. MORSE. Yes.

Mr. GREENE. Whatever it may have cost the Government, if this thing were to be reckoned in the terms of a profit-making enterprise, the thing that is sold, in the first place, would have to be ready for sale, and will not enter into that competition at all?

Mr. MORSE. No, indeed.

Mr. GREENE. In any of the forms of bookkeeping employed by these larger private institutions, do they charge any portion of the rest of the maintenance and overhead to the maintenance and overhead necessary for the selling end?

Mr. MORSE. Only to the extent that they charge a portion of the president's salary, and the salary of one of the four or five vice presidents, the one who was the chief of the selling unit. That is a relatively small amount, I would say. I believe, Mr. Greene, that the comparison here is on a fair comparable basis, as close as can be gotten, without prejudice to either side.

Mr. GREENE. Of course, I realize the intent of the figures, I was only getting at how they can really guide us, because the conditions in the two cases are not analogous.

Mr. MORSE. No.

Mr. GREENE. The one institution has to contribute all its effort, energy, and cleverness for the purpose of producing something to sell, and it has to maintain its overhead to sell it at a profit, whereas this happens to be simply a salvaging sale in an institution that does not produce things for sale, but got them at a tremendous price, and is maintaining an enormous overhead to have them sold. They do not start even.

Mr. MORSE. They can not start even.

Mr. GREENE. And no amount of bookkeeping can make an absolute comparison.

Mr. MORSE. No; it is just an indication. I wanted to prove to myself that some of the statements that had been made to me by people who appeared to be convinced that we should sell them big blocks of material were erroneous. That is why I started out on it.

Mr. GREENE. I just merely emphasized that because some of our men may undertake to show by comparison that our overhead for selling is either over or under, whereas there are elements that even the most expert bookkeeper can not figure out precisely on that point.

Mr. MORSE. There is one point I would like to bring out, that in connection with our sales and returns on this you must realize that a great quantity of the material that we have sold—machine tools, for instance—has been used by the War Department. It has had the use of them, while the percentage of return that I have been speaking of is based on their cost, and not on an appraised second-hand value; and also that under the sales of scrap are in many instances completed forgings, or completed machine parts, have been sold as scrap, which costs an enormous—I will not say an enormous amount, but, as compared to their scrap value, costs a very much greater amount.

Mr. GREENE. You enter into this equation largely as an auctioneer.

Mr. MORSE. As a liquidating unit.

Mr. GREENE. I used that common term. And under terms in which the question of profit is not one so much involved, so far as overhead and other factors are concerned, as getting rid of the surplus at anything that will get rid of it.

Mr. MCKENZIE. I want to ask you two or three questions pertinent to this bill. In the first place, are your receipts turned over to the Treasury as "Miscellaneous receipts"?

Mr. MORSE. Yes, sir.

Mr. MCKENZIE. All of your personnel, as I understand it, is now civilian except one?

Mr. MORSE. Except one.

Mr. MCKENZIE. And you expect to keep as many of those men as you can until the 1st of July next?

Mr. MORSE. Yes, sir.

Mr. MCKENZIE. You have got the money to do that?

Mr. MORSE. Yes, sir.

Mr. MCKENZIE. Would it be possible, in your judgment, at that time, retaining your services as head of this department, to turn the remainder of the work over to the Army officers?

Mr. MORSE. Not entirely. I think that my recommendation has been that the personnel which I have collected together, at least the chiefs of the sections upon whose judgment I have learned to rely as to markets and sales problems, should be kept longer than

that, because they are peculiarly trained in sales work. There is no finer type of men in the world, and no men who have a finer type of training than the Regular Army men, but they have never had to be salesmen, and they have not been trained in sales work, but I think that we can, if it is so desired, some time next year turn the entire problem over to them. It is my hope personally to be through and get the work in such shape that we can be through sometime early in the fall, if we can develop the proper commissioned personnel to handle it.

Mr. McKENZIE. Right on that point, I think that if we were speaking now at a time prior to the war, and thinking only of the Regular Army officers who had been in the service for a great many years during peace times, when there was not much business being done, there would be considerable force in what you say, but at the present time we have in the Quartermaster Department and in the various other departments of the Army or Military Establishment, some of the very best business men and salesmen that we have in the country, and I assume that quite a number of those men will remain in the Army, being appointed to fill the vacancies caused by the reorganization bill which passed the House a few days ago, and, if that is true, it seems to me that we could perhaps do away with a large number of the civilian personnel under your department. I am speaking seriously now, having in mind the amount of money.

Mr. MORSE. I appreciate fully your desire to save money, and I think that I look at it in the same light that you do, because I am interested in that phase of it. If we can find the men that are not needed right in the department or in the bureaus where they are, to carry out the final push on the sales, to carry out the policies with the push that we want put behind them; if we can find men in excess of those, I will be only too glad to make use of them. I do not want in any way to cripple, as has already been crippled through the reduction of commissioned personnel and civilian personnel, the sales units in the various bureaus. There is not a bureau but what tells me to-day that they could sell faster and get more material sold if it were not for the fact that they had been obliged to reduce their personnel and discharge temporary officers.

Mr. GREENE. This seems to be perhaps an odd question, but in view of the present state of the problem, perhaps it may have some practical side. Do you find, if a sale is proposed by a man known to be a military officer of the Regular Establishment, that it is more prejudice perhaps than it would be if it were proposed by a civilian known to the trade? We start, of course, with the idea that you are trying to sell, more or less, a difficult proposition, that is salvaged material. Does the public seem to take advantage of the disposition not to deal as well with the man in the Army as it would with a civilian who is known to and knows the trade?

Mr. MORSE. I have seen instances where those officers have been hoodwinked by clever purchasers. I am not saying that some of the civilians have not been hoodwinked also.

Mr. GREENE. I understand; but I am getting toward the tendency.

Mr. MORSE. I will say that probably some of the cleverest men in the United States engaged to-day in buying surplus from the War Department, and they will stop at nothing to influence the men responsible for the sales to assist them in securing that surplus at a reasonable price.

Mr. GREENE. Well, is there, apart from the public taking advantage, apparently—that is this part of the public—of what they may think is the inexperience of Army officers in salesmanship, also a disposition to be somewhat prejudiced against him, because of the character of his employment and service?

Mr. MORSE. I do not think I could say there was. I think that the loss from a Regular Army officer handling the sale would come from his being too careful and insisting entirely on sealed bids rather than negotiating and actually selling the material to some party. I think the loss from that source would be greater than from the other.

Mr. GREENE. I am not trying to prove anything by my questions, but we are in a peculiar state.

Mr. MORSE. I do not think it would make a bit of difference whether it was a Regular Army officer or a civilian. If some of the purchasers could take advantage of him, they would do it, and would not hesitate for an instant.

Mr. GREENE. So that phase of it does not enter into it?

Mr. MORSE. I do not think so.

Mr. GREENE. I am glad to hear you say that.

The CHAIRMAN. I want to read from the hearings before the committee on the Army appropriation bill for the fiscal year 1920; I read from page 419 of the hearings. At that time Mr. Hare was the Director of Sales, and the question was asked by the chairman:

Have you given the matter of the length of time in which you can dispose of all this material any thought?

Mr. Hare replied:

I have, sir, and I have stated that if we were given authority to employ the right kind of personnel, I believe we can clean up the majority of this by the 1st of November, this year.

This was November 1, 1919.

I shall be very much disappointed if you do not get rid of a majority of the material by that time, and when I say the majority of it, there are certain things for sale that may take years to dispose of. This organization should be dropped the moment the major sales are accomplished. There will be no justification for continuing an organization of this kind after the main purpose has been accomplished, which, to my way of thinking, is the sale of 75 per cent of our estimated surplus.

Now, how much of your estimated surplus have you sold up to the present time?

Mr. MORSE. \$1,200,000,000 has been sold out of his estimate of \$2,000,000,000.

The CHAIRMAN. Now, I read further from page 299 of the hearings, volume 1. The Secretary of War was testifying, and he said this:

Mr. Cuthell is in this country dealing with these claims. Mr. Cuthell's organization will probably discontinue its work about the 1st of July, but Judge Parker's organization in France will probably have to continue for the rest of the year, and Mr. Hare's organization will probably have to continue for another year.

Now, this testimony was in May or June of last year. The Secretary seemed to indicate that the work of this division would be finished in a year, which would be about this time. Now, it seems that the work is far from finished.

Mr. MORSE. Yes, sir.

The CHAIRMAN. Can you give the committee an approximate idea of when the work will be completed?

Mr. MORSE. Mr. Chairman, there have been too many estimates made already. I do not know, and I do not know for the reason that

no one has yet told us what the job was. Mr. Hare was sincere in what he said, but he did not realize what we realize at the present time when he said it, that we were not going to have the surplus to sell in that length of time; that it was physically impossible for the Army to turn it over within that period of time so that we could get it done.

The CHAIRMAN. I recollected the testimony of these gentlemen, and so I wanted to find out whether we could get anything that would be a little more accurate.

Mr. MORSE. Mr. Crowell and the Secretary, Mr. Baker, have asked the same question, and I have told them that if they would tell me what the problem was I would make arrangements, provided they could give me a sufficient personnel in the bureaus to handle the work and get the job done somewhere near a definite date, but we have had to slow up, due to the fact that we could not get the material shipped any faster or get it moved out, and, just as I have mentioned previously this afternoon, we know that there is a large quantity of material that has yet to come over to be sold, and we do not know what it is or how much it is going to be, and I do not care to make any estimate as to when we will get it done.

The CHAIRMAN. Well, I compliment you on being circumspect, at any rate.

Mr. MORSE. Thank you, Mr. Chairman.

Mr. DENT. What is the policy as to making sales of small quantities? Where you happen to have a small quantity, do you concentrate the entire product anywhere and make a general sale of it?

Mr. MORSE. It depends on the material. Sometimes we do and sometimes we do not. There are certain materials that can be sold to better advantage by selling them where they are. There are certain other materials that we can sell to better advantage by getting an inventory and the location and making one sale here in Washington. I think, probably, scrap is a good illustration of the latter case, as the scrap business is peculiar. There are a few big scrap firms in the country that have regular customers, and they can buy up large quantities of scrapped material and they will pay, we have found, better prices if they can buy a big bunch of it, even though it be scattered, than if we offered a small quantity at a time.

On the other hand, if it is a miscellaneous class of material, we have tried to have it sold by the man right on the job at whatever price it can be sold for, we putting an upset price on it, below which he is not supposed to sell.

The CHAIRMAN. Would your department have the figures as to the character and quantity of goods that were delivered by the War Department to other departments of the Government, and for which no sum was paid?

Mr. MORSE. I will have those for the last four or five months since I took over the work, because I insisted, for good business reasons, that it was advisable to put all of those transfers through one point, so that we could keep track of them, and I have records now of every transfer to other governmental departments made without the transfer of funds. They are all approved in my office.

The CHAIRMAN. Would you be able to insert that list in the record?

Mr. MORSE. Yes, sir.

The CHAIRMAN. Within two days?

Mr. MORSE. In how much detail do you want that? Do you want each item, or may I group them into groups of items?

The CHAIRMAN. That would be sufficient.

Mr. MORSE. I can put that in within the next two days.

EXHIBIT B.

WAR DEPARTMENT,
PURCHASE, STORAGE AND TRAFFIC DIVISION,
OFFICE OF THE DIRECTOR OF SALES,
Washington, March 27, 1920.

Memorandum for Mr. E. C. Morse, Director of Sales.

1. Attached please find a list of material transferred to other governmental departments under authority of Executive orders and acts of Congress, as reported to the Transfer and Inventory Section, Office of the Director of Sales, up to and including March 27, 1920. Also attached is a statement of the office furniture and equipment which was transferred to the General Supply Committee of the Treasury Department. This list consists of only the major items and was furnished from the records of the General Supply Committee, the value of the items listed on same being estimated. Also included in this list are the motor vehicles transferred to the Department of Agriculture, Bureau of Public Roads, Post Office Department, and Public Health Service. This list is compiled from records in Maj. Shaw's office.

J. HOWARD BENNETT,
Chief, Transfer and Inventory Section.

Recapitulation of list of transfers to other governmental departments under authority of Executive orders and acts of Congress as reported to the transfer and inventory section, office of the Director of Sales, up to and including Mar. 27, 1920.

	With funds.	Without funds.	Total.
Agriculture.....	\$491	\$70,600,862	\$70,601,353
Commerce.....	5,525		5,525
Interior.....	49,238	15,815,716	15,864,954
Navy.....	384,333	2,406,439	3,090,772
Post Office.....	275	9,545,000	9,545,275
Treasury.....	180,823	1,747,125	1,927,948
Miscellaneous.....	11,776	80,720	92,496
Total.....	932,461	99,695,962	100,628,323

Below are listed in detail a few of the items included in the attached statement of material transferred to other Governmental departments.

	Number of machines.	Value.
AGRICULTURE (17).		
Touring.....	1,999	\$1,569,000
Ambulances.....	1,137	1,083,000
Trucks.....	19,627	63,587,000
Motor cycles.....	158	67,000
Total.....	122,921	66,306,000
POST OFFICE (16).		
Touring.....	1,645	968,000
Trucks.....	4,042	8,119,000
Motor cycles.....	1,038	458,000
Total.....	6,725	9,545,000
PUBLIC HEALTH (6).		
Touring.....	217	128,000
Ambulances.....	136	98,000
Trucks.....	541	1,395,000
Motor cycles.....	248	106,000
Total.....	1,142	1,725,000
Grand total.....	30,788	77,576,000

¹ Includes 2,566 authorized but not shipped.

All of these items are included in column No. 14.

A list of major items transferred to the General Supply Committee by the War Department.

Quantity.	Item.	Unit price.	Total.
6,100.....	Chairs:		
1,537.....	Folding.....	\$0.75	\$4,575.00
58.....	Revolving.....	8.50	13,064.00
103.....	Revolving, wide arms.....	10.50	608.00
	Typewriter.....	6.10	628.00
100.....	Cabinets, card, 2-drawer:		
100.....	3 by 5.....	2.00	200.00
100.....	4 by 6.....	2.50	250.00
100.....	5 by 8.....	3.00	300.00
750.....	Typewriters:		
456.....	Corona.....	35.00	26,250.00
62.....	Underwood.....	70.00	31,850.00
97.....	Remington.....	70.00	4,340.00
100.....	L. C. Smith.....	70.00	6,790.00
100,000.....	Monarch.....	65.00	6,500.00
5,000.....	Addressograph frames.....	.02	2,000.00
17,000.....	Brooms, corn.....	.70	3,500.00
	Brushes, scrub.....	.125	2,125.00
49.....	Desks:		
74.....	50-inch.....	40.00	1,960.00
111.....	60-inch.....	46.00	3,404.00
9.....	Single-pedestal, typewriter.....	25.00	2,775.00
50.....	Double-pedestal, typewriter.....	30.00	270.00
1.....	Stands, typewriter.....	3.00	150.00
10.....	Cutting machine.....	200.00	200.00
	Costumers.....	7.50	75.00
1,000.....	Rulers, maple:		
1,000.....	15-inch.....	.30	300.00
	18-inch.....	.40	400.00
500.....	Hatchets:		
500.....	Claw.....	.575	288.00
	Bench.....	.84	420.00
2,000 feet.....	Wire, R. C.:		
1,000 feet.....	No. 12.....	.05	100.00
2,843.....	No. 14.....	.05	50.00
	Fire extinguishers, Pyrene.....	5.00	14,215.00
253.....	Tables:		
327.....	48-inch.....	20.00	5,060.00
36.....	60-inch.....	20.00	6,540.00
	72-inch.....	35.00	1,260.00
252.....	Ash cans:		
48.....	Large.....	4.35	1,096.00
	Small.....	3.45	177.00
3,972 pounds.....	Rope, manila:		
5,110 pounds.....	1-inch.....	.275	166.00
	1/2-inch.....	.35	1,789.00
300.....	Shovels:		
404.....	Fire.....	3.50	1,050.00
200.....	Round point.....	3.00	1,212.00
	Spades.....	2.00	400.00
300.....	Wrenches, monkey:		
200.....	8-inch.....	.75	225.00
585.....	10-inch.....	.85	170.00
250 pounds.....	12-inch.....	1.00	595.00
198.....	Bands, rubber.....	1.25	313.00
500.....	Drills, star, 1/2-inch.....	.25	50.00
1,000.....	Shears, 10-inch.....	1.00	500.00
1,000.....	Mops.....	.26	260.00
	Handles, mop.....	.30	300.00
Total.....			148,751.00

NOTE.—The above items were taken from the records of the General Supply Committee and the values estimated.

Below are listed in detail a few of the items included in the attached statement of material transferred to other governmental departments.

Department of the Interior:

Black powder, 6,200,126 pounds.....	\$1,550,031.50
T. N. T., 25,929,483 pounds.....	12,964,741.50
Nitro starch, 3,258,349 pounds.....	684,253.29
No. 8 detonators, 7,000,000 pounds.....	116,690.00

Department of the Interior, Alaskan Engineering Commission:

Frozen beef, 100,000 pounds.....	18,200.00
Bacon, prunes, and tomatoes.....	34,397.00

Department of Agriculture:

1,000,000 feet galvanized-iron pipe.....	348,936.00
73,209 sheets corrugated steel roofing.....	122,229.00
334 buckets (C. S., O. P., and B. D.).....	342,350.00
199 concrete mixers.....	187,458.00
71 4-W drop trailers.....	106,220.00
347 transits, engineer's.....	104,100.00
1,034,800 pounds T. N. T.....	543,270.00
3,000 escort wagons.....	660,000.00
276 water carts.....	129,720.00
405 drinking wagons.....	191,160.00

Navy Department:

Railway equipment.....	164,220.00
Cranes (industrial and locomotive).....	363,433.00
Machine shop building.....	478,564.00
Cotton fiber.....	272,641.00

ARMY APPROPRIATION BILL, 1921.

List of material authorized for transfer to other governmental departments under authority of executive orders and acts of Congress as reported by the Transfer and Inventory Section, Office of the Director of Sales, up to and including Mar. 27, 1920.

	Sub- sist- ence.	Clothing, equipment, medical and hospital supplies.	Leather and harness.	Office and house- hold equip- ment.	Rail- way equip- ment.	Power plant equip- ment.	Building and road- building materials.	Acids, chemi- cals, and explosives.	Fer- rous and non- ferrous metals.	Tex- tiles.	Arms and ammuni- tion.	Aircraft.	Ma- chine tools.	Motor vehicles, etc.	Wag- ons, etc.	Total.
Treasury Department, General Supply Committee, Executive order, Dec. 3, 1918.				\$178,888												\$178,888
All departments July 11, 1919 (No. 5, 66th Cong.):																
Agriculture.		\$27		210						\$254						\$254
Commerce.	\$60	879		315		\$35		\$26		500				\$3,710		\$4,491
Interior.	47,516	420	\$148	92	\$702		\$360									\$1,552
Navy.	6,264	113	1,000	2,441	2,611			41,458			\$87,702	\$516,076	\$40	26,633		\$1,492,238
Post Office.				275												\$1,275
Treasury.			1,828	1,940	510	411		1,557	\$718							\$1,940
Panama Canal.							100									\$1,512
Federal Board for Vocational Training.				85												\$1,85
United States Shipping Board.				5,720						47						\$1,570
Library of Congress.																\$1,47
Treasury Department, General Supply Committee. (No. 275, 65th Cong., Feb. 25, 1919).														13,741		13,741
Treasury, Mar. 3, 1919. (No. 326, 65th Cong.)				8,384										1,725,000		1,733,384
St. Elizabeth Hospital, July 19, 1919. (No. 21, 66th Cong.)														42,458		42,458
Navy Department, Marine Corps, Feb. 25, 1919 (No. 275, 65th Cong.)	360			1,052		410	810	884			9,713	1,041	220			14,490
United States Senate, July 11, 1919 (No. 5, 66th Cong.)														38,262		38,262
Navy, July 11, 1919 (No. 5, 66th Cong.)				2,997,303	840,363	433	501,241	5,670		272,641	65,418	679,417	116,787	80,506		2,391,949
Interior, July 19, 1919 (No. 21, 66th Cong.)											15,315,716					15,315,716
Post Office, July 2, 1919 (No. 185, 65th Cong.)														9,545,000		9,545,000
Agriculture, Bureau of Public Roads, Feb. 28, 1919 (No. 290, 65th Cong.)														6,115,663		6,115,663
All departments, July 19, 1919 (No. 21, 66th Cong.)				98,979	306,521	2,049,430	544,602	348,986						940,279		940,279
Total.	\$4,200	1,439	2,976	202,394	404,031	873,421	2,551,941	192,349	654,273	442,164	478,549	1,196,534	123,162	77,782,109	940,279	100,623,323

¹ Items transfers with funds.

The CHAIRMAN. I have in mind, of course, the legislation which Congress passed authorizing the Secretary of War to turn over a lot of road-building material to the Department of Agriculture and to turn over motors to various other departments; and I wondered whether we could get a list of those materials that he has turned over, their cost, and in what amount they were turned over to the various other departments.

Mr. MORSE. I can say this, that in the aggregate, to within a month ago, there have been authorized for transfer and approved in our department something over \$66,000,000 in the last year. There are two heavy bills, one for road building and the other the Navy appropriation bill of last year, under which they are getting an enormous quantity of material for nothing.

Mr. FIELDS. I was talking to you about nitro when I was interrupted a while ago. What kind of sale did you make by which you would probably get an additional \$1,500,000 on that plant?

Mr. MORSE. They are obligated to pay us \$8,551,000. After they have paid us that amount they are allowed a further amount of 10 per cent for their profit. Beyond that point they pay us 50 per cent of the net income up to \$1,500,000.

Mr. FIELDS. What was the total cost of that plant, the original construction?

Mr. MORSE. In the neighborhood, I understand, of \$60,000,000, with a replacement value to-day of about \$40,000,000.

STATEMENTS OF COL. EDWARD A. HICKMAN, LIEUT. COL. PAUL B. MALONE, COL. E. P. KING, JR., AND MAJ. JAMES B. GOWEN.

The CHAIRMAN. Col. Hickman, the committee will be very glad to hear from you.

Col. HICKMAN. Mr. Chairman, from the preliminary statement made by Gen. Lord and the statements of the two gentlemen who have just preceded me it is of record that the appropriation "Contingencies of the Army" for 1921 that the War Department is seeking to have incorporated in the bill consists of three parts, as follows: One for which the Secretary of War is asking for his office \$100,000, one for the Department of Sales, for which \$400,000 is asked, and one for the Contract Adjustment Board, for which \$200,000 is asked, making a total of \$700,000 that the department is seeking this year in the appropriation "Contingencies of the Army." The total amount sought is \$300,000 less than was appropriated by Congress for the same item last year.

The purposes for which the \$100,000 are to be used are shown by the name of the appropriation, contingencies; for those things for which it is difficult to provide for in advance and which are not specifically appropriated for elsewhere. The exact purposes for which this money has been spent can be well illustrated from the detailed report which law requires be made to Congress by the Secretary of War in the document to which Gen. Lord has referred, Document No. 440 of the House of Representatives, Sixty-sixth Congress, second session, shows in detail how this appropriation for that particular year was spent.

I have been instructed by the office of the Secretary of War to most earnestly request of the committee that at least \$100,000 be appropriated for that particular part of the bill commencing with the first word, seventh line, "for" and ending at the second word, line 19, "posts," just preceding the "\$1,000,000" in the appropriation act made by Public No. 7, Sixty-sixth Congress, H. R. 5227.

The CHAIRMAN. Colonel, you had \$100,000 for that purpose in the appropriation bill for this fiscal year. You had \$25,000 a year for four years prior to our entry into the war, as I recall. How did you expend the \$100,000 appropriated last year?

Col. HICKMAN. Mr. Chairman, of the \$100,000 appropriated last year I had this account checked on the 24th day of March and found it to be in the following condition: Unallotted balance, \$54,828.87. Of the total amount on that date, \$91,314.62 of the \$100,000 was unexpended.

The CHAIRMAN. Have contracts been made to draw upon that unexpended balance of \$54,828.87?

Col. HICKMAN. I would say that was in a sense obligated; yes, sir.

The CHAIRMAN. How much of it was obligated?

Col. HICKMAN. That can not be determined in time to get it into the record; \$91,314.62 was unexpended March 24, 1920.

The CHAIRMAN. The appropriation for 1917 was \$50,000?

Col. HICKMAN. Yes, sir. This appropriation increased rapidly during the war, and at one time amounted to \$450,000.

Gen. LORD. In 1917 it was \$100,000.

Col. HICKMAN. It reached as high as \$450,000 in one year.

The CHAIRMAN. I have the bill before me, the law the print of it, and it says for the fiscal year 1917, \$50,000.

Col. HICKMAN. Yes, sir; that is in the hearing.

Gen. LORD. The total here is \$100,000. We expended that year \$58,507.

The CHAIRMAN. The committee appropriated \$50,000.

Gen. LORD. And then there was an additional appropriation.

The CHAIRMAN. Of course, that was before we went into the war.

Gen. LORD. After which we got \$50,000 additional in a deficiency bill, making a total of \$100,000.

Col. HICKMAN. The Secretary has asked for an appropriation for his part of this item of \$100,000, with the understanding, of course, that it would not be spent if not needed. I understand that he has in mind in asking for this amount the possibility of maintaining abroad some commissions like Judge Parker's commission or some unforseen expense in connection with removal and return of the dead from France.

The CHAIRMAN. There is another committee, I think, appropriating for that.

Col. HICKMAN. But he had in mind a contingent expense he might have to meet in connection with settling war matters abroad.

Mr. GREENE. Considering what has been spent, and what remains in the Treasury obligated, is the remainder sufficient to run you from now on until July 1, roughly?

Col. HICKMAN. I would say it would be the difference between \$100,000 and \$54,828.87.

Mr. GREENE. About \$45,000, then?

Col. HICKMAN. Yes, that is available.

Gen. LORD. The unallotted balance to-day on the books is \$54,-828.87; that is of that \$100,000 allotted to the Secretary of War on the books of the Secretary of War.

Mr. McKENZIE. Do you think you will be compelled to spend all of that \$54,000?

Col. HICKMAN. By no means. Every cent that is spent is reported direct to Congress, as required by statute.

Mr. McKENZIE. Do you have any reason to believe that the expense will be greater in the next fiscal year than it was during the present year?

Col. HICKMAN. I can easily see where it could be equal to that, in connection with conditions that may arise in the closing up of the war situation.

Gen. LORD. Col. Hickman, if you will turn to page 4 we will also take up, with the committee's permission, the United States Service Schools.

The CHAIRMAN. I see you are asking for \$100,000 for these service schools. The committee appropriated \$75,000 last year. What is the necessity for the increase?

Col. HICKMAN. Mr. Chairman, I have here, and would like to submit to the committee a slight change in the wording of the act, as it occurs in the current appropriation act, that will make it applicable to the locations of the service schools as they now actually exist.

The CHAIRMAN. What is that language, if you please?

Col. HICKMAN. I have a copy of it here. One of the changes, I might say, to explain that, is that it is proposed to remove the field service school and the correspondence school for medical officers from Fort Leavenworth to Washington in connection with the Walter Reed Hospital.

Mr. McKENZIE. They will not do that this next year, will they? They will not have the building?

Col. HICKMAN. They might not have the building, but it could be operated in connection with the Army Medical School, now located in this city. That was the recommendation of the Surgeon General's Office.

It is also suggested to change in this bill the wording to conform with the act that modified the language of this bill permitting the money that was appropriated for the Infantry School at Fort Sill for the fiscal year 1920 to be expended at Camp Benning. That has already been attended to for the current year.

The CHAIRMAN. You are also asking for a modification of language so that it will enable you to conduct a school at Camp Zachary Taylor, in Kentucky?

Col. HICKMAN. Yes; Camp Zachary Taylor, in Kentucky, is a basic school for Field Artillery, and the Fort Sill school, in Oklahoma, is really the post graduate school or finishing school of the Artillery. In connection with the assembling of this estimate, I would like to state for the information of the committee that the total estimates that came in to the department for the service schools amounted approximately to \$150,000. In the review of the estimates in the office of the Secretary of War it was felt that this one along with the other estimates, in their entirety, should be reduced, and this one was reduced to \$100,000 for the purpose, as indicated in the language of the bill, for carrying on the activities of these schools. We have

had from the Fort Leavenworth school a most urgent request to hold the appropriation up, if possible, to the amount which we have asked, and I would like to say for the benefit of the committee that, in my opinion, there is no money spent in the military service that could be spent to better advantage than in the maintenance and upkeep of the service schools.

The CHAIRMAN. You do not agree with the statements that were made on the floor by some Members of Congress that the Leavenworth clique was running the Army?

Col. HICKMAN. No, sir; I do not. I think if it had not been for the Leavenworth graduates we would have been in a very difficult position during the war.

The CHAIRMAN. I am inclined to agree with you.

Mr. McKENZIE. In connection with these schools in the appropriation bill for the fiscal year 1918, we appropriated \$35,350,000?

Col. HICKMAN. Yes, sir.

Mr. McKENZIE. Of course, I can understand why we need more money now, because we increased the number of officers, and perhaps there would be more need of instruction, and all that sort of thing; but I was wondering whether we would need to appropriate \$100,000.

Col. HICKMAN. I would like to state, in connection with that, that the work of these schools is far-reaching. They conduct the correspondence courses, and send out printed matter to any officer who is interested enough to put his name on the list. This helps all to keep abreast of the work and what we are doing there. At the present schools there have been assembled as instructors and students many of the brightest minds of the Army, men who held superior rank and command in the American Expeditionary Forces. These men are using their war experience in this work. At this time all of the schools are functioning, and \$100,000 is needed for the instruction of the officers who will attend next year. It will enable them to profit by the developments of the war. I can not be too enthusiastic in bringing to your attention the great good that has come to the service and the country from the service schools.

In addition to the Regular officers, these schools are opened to the National Guard officers, and I have the figures now to show that one school—the school at Benning—is getting on its feet in that way, and that we have some 25 or 30 National Guard officers there who are taking the Infantry school course. Those men will go back to their commands with the ability to teach, as the result of their experience there, that can not be surpassed. Then, again, the entire Army will be reached, through the system of mailing lists, as to what is going on there at these schools. Considering the number of them, we are really holding them down to a very reasonable figure. To make it less will not do the good that can be done with just a few more dollars added to it. As I said before, the estimate was reduced in the Secretary of War's office in the adjustment of the whole estimates from \$150,000 to \$100,000.

The CHAIRMAN. You are increasing the number of schools, are you not, by this new language?

Col. HICKMAN. No; these schools are now in existence.

The CHAIRMAN. I recognize that; but they have come into existence since the last fiscal year?

Col. HICKMAN. Yes, sir. The nucleus was there and the records of the old schools were there; but they are now beginning to function and really do good.

The CHAIRMAN. You have not submitted the proposed new language, and I suggest that you give to the reporter for insertion in the hearings a copy of the language you propose to insert in lieu of that which we have in the print.

(The matter referred to is as follows:)

EXHIBIT A.

PROPOSED CHANGES IN LANGUAGE IN ARMY APPROPRIATION ACT.

- Appropriation item: "United States service schools."
Service recommending change: Office Chief of Staff.

WORDING OF CURRENT ACT.

To provide means for the theoretical and practical instruction at the Army service schools (including the Army Staff College, the Army School of the Line, the Army Field Engineer School, the Army Field Service School and Correspondence School for Medical Officers and the Army Signal School) at Fort Leavenworth, Kansas, the Mounted Service School at Fort Riley, Kansas, and the School of Fire for Field Artillery, and for the Infantry School of Arms at Fort Sill, Oklahoma, by the purchase of textbooks, books of reference, scientific and professional papers, the purchase of modern instruments and material for theoretical and practical instruction, employment of temporary, technical, or special services, and for all other absolutely necessary expenses, to be allotted in such proportion as may, in the opinion of the Secretary of War, be for the best interests of the military service. Not exceeding \$300 per month may be used for the payment of \$100 per month to a translator at the Army Service Schools, Fort Leavenworth, Kansas, \$100 per month to a translator at the School of Fire for Field Artillery, and \$100 per month to a translator at the Infantry School of Arms, Fort Sill, Oklahoma, to be appointed by the commandants of the schools named, with the approval of the Secretary of War, \$75,000.

PROPOSED WORDING.

To provide means for the theoretical and practical instruction at the Army Service Schools (including the General Staff School, the School of the Line, and the Signal Corps School at Fort Leavenworth, Kansas, the Army Field Service School and Correspondence School for Medical Officers at Washington, District of Columbia, the Cavalry School at Fort Riley, Kansas, the Field Artillery Schools at Fort Sill, Oklahoma, and at Camp Zachary Taylor or Camp Knox, Kentucky, and for the Infantry School at Camp Benning, Georgia, by the purchase of textbooks, books of reference, scientific and professional papers, the purchase of modern instruments and material for the theoretical and practical instruction, employment of temporary, technical, or special services, and for all absolutely necessary expenses, to be allotted in such proportion as may, in the opinion of the Secretary of War, be for the best interests of the military service. Not exceeding \$400 per month may be used for the payment of \$100 per month each to a translator at the Army Service Schools, Fort Leavenworth, Kansas, Field Artillery School, Fort Sill, Oklahoma, the Infantry School, Camp Benning, Georgia, and the Cavalry School, Fort Riley, Kansas, to be appointed by the commandant of the schools named, with the approval of the Secretary of War, \$100,000.

Mr. McKENZIE. Right in that connection, will you kindly define the word "translator," as used in this proposed amendment, and in the old law, for the benefit of the record?

Col. HICKMAN. "Translator"?

Mr. McKENZIE. Yes.

Col. HICKMAN. My understanding of "translator" is that he is a man employed that is able to translate, for instance, from French; to take a French artillery drill regulation, and translate it into English.

Mr. McKENZIE. That was not exactly my understanding about it, and that is why I wanted to get a definition of it in the record, so

that when we are asked on the floor of the House about these men, we will be able to define who they are.

Col. HICKMAN. The officers abroad who are on duty at the French schools might get a French paper that would be particularly valuable or of information to the service schools, and it would be sent on there to be used, and utilized, and when it was translated it would be sent out to the service.

Mr. GREENE. A mere academic knowledge of French does not fit anybody necessarily to translate a technical document in the French language into intelligible English.

Col. HICKMAN. It would not; it would take some one who knew French and English as well.

Mr. GREENE. He would have to know the artillery terms employed in the French language, and be able to translate them into something corresponding in English. He has to be an artillery or military man to do that.

Col. HICKMAN. Yes.

Mr. GREENE. A mere academic knowledge of French does not qualify a man to translate technical articles from one language to another.

Col. HICKMAN. No.

Mr. MCKENZIE. This would mean, of course, providing for four of them, and they would not be men commissioned in the service.

Col. HICKMAN. They would not be, as a rule.

The CHAIRMAN. You have increased the number from three to four by this proposed new item.

Col. HICKMAN. Yes, sir; from three to four.

Mr. GREENE. Now, Colonel, while the language of the bill and your amendment pretty well set up the purposes for which the \$100,000 are to be used, are they altogether restrictive, and is that amount to be used for nothing else? For instance, it is suggested that you have enlarged the schools, both in size and in their curriculum in one way or another, and yet the overhead and maintenance is all provided for under another appropriation, the pay of the people who are there is taken care of in another way, the enlisted personnel is separate, as it might be, at a garrison, the commissioned personnel, whatever it is and whatever it may be, is under other parts of the appropriation bill, and, of course, the upkeep of the plant is taken care of. How does the mere office paraphernalia and papers passing through it come to \$100,000?

Col. HICKMAN. Mr. Greene, there are schools at Fort Leavenworth, at Fort Sill, at Benning, and at Camp Taylor, for each of which this appropriation would provide \$25,000. They are not quite divided in that way.

Mr. FIELDS. Do you mean Camp Taylor, or not?

Col. HICKMAN. Camp Zachary Taylor, in Kentucky. That is a basic school for Field Artillery. As I recall, the original Fort Leavenworth estimate for the school was \$30,000, and Camp Benning was for \$55,000 when it came in before it was acted upon in the Secretary's office. There are a number of things for which that money is expended, which are tabulated here, such as salaries, wages, equipment and material, machinery, repairs, stationery, small articles of furniture needed for the operation of the schools, printing, binding, etc.

Mr. GREENE. That is just what I am getting at, Colonel. I have a very sympathetic interest in these schools, and I think they are a

splendid thing, but at the same time we ought, of course, naturally, consider the economies of the thing if we can.

Col. HICKMAN. The appropriation sought provides approximately \$25,000 for each of the institutions.

Mr. GREENE. I know it, but now let us see. Everybody who goes there is under pay out of another appropriation.

Col. HICKMAN. Yes; there is no pay for an officer in this estimate.

Mr. GREENE. Every enlisted man's pay is taken care of in another appropriation; his subsistence, clothing, and upkeep generally are taken care of out of another appropriation, and the maintenance of the plant is all taken care of out of another appropriation.

Col. HICKMAN. That is true as to the main items. It is absolutely necessary, however, that the commanding officer of those institutions have at his command a small amount of money that he can use for school purposes as indicated in the language of the bill. Emergency repairs to equipment are often necessary. Without a small fund the commanding officer of the school would be handicapped beyond measure in the conduct of its affairs.

Mr. GREENE. Have you not at any one of these posts the necessary utility people in the service who would be able to do that sort of thing?

Col. HICKMAN. I will say that the amount paid in salaries out of the entire appropriation is exceedingly small.

Mr. GREENE. Is there not in the enlisted service an old artificer who could fix up a fence?

Col. HICKMAN. Not very well. You have got to have a man who has the grade of a carpenter who can do reasonably good work.

Mr. GREENE. Are not these posts sufficiently large to have sufficient details of enlisted men containing the ordinary mechanical men who would be necessary for the upkeep of any physical plant?

Col. HICKMAN. As a rule, that is true, but we are still, as you will probably recall, in a very scattered condition, and the posts are thinly occupied as yet.

Mr. GREENE. For instance, take the purchase of modern instruments and material for theoretical and practical instruction. I supposed that the very purpose of that was to assemble troops who were already equipped with instruments and material for theoretical and practical instruction.

Col. HICKMAN. You could not do that. For instance, we need drawing instruments and we need plane tables, and they belong at and to the school and do not go back with the troops, nor do the troops or officers bring them there with them.

Mr. GREENE. Is there anything you have or can prepare without much labor—there is no use cluttering the record up—to give us an idea so that when somebody asks these questions and questions our economy, and says that the major portion of this thing is already provided for in another way, we will be able to answer him? We have long since learned to anticipate on our own account that when we think we have appropriated for something in one paragraph of this bill there will be forty other paragraphs that the comptroller, with his magnifying glasses, can see provided more money for the same thing, and that is what we are afraid of.

Col. HICKMAN. I can see your point, and I will gladly get up a statement of that nature; but I know from personal experience that

it is absolutely essential that the commanding officers of the schools in question have this small fund which they can use in an emergency.

Mr. GREENE. I can understand that.

Col. HICKMAN. And it has to be used according to the language of the law.

The CHAIRMAN. Probably that could be simplified somewhat, Colonel, if you will kindly segregate this amount so that you can show us how much you intended to use for the purchase of textbooks, how much for books of reference, how much for scientific and professional papers, how much for the purchase of modern instruments, and material for the theoretical and practical instruction, and the employment of temporary technical or special services; in short, take all the items of the appropriation and tell us how much you are going to use for each item.

Col. HICKMAN. I will give you a table in regard to that for the record.

(The table referred to is as follows:)

Estimated amount of expenditures from the appropriation "Army service schools."

Items of appropriations.	Per cent.	Amount.
Translators.....	4.8	\$4,800
Textbooks.....	15.0	15,000
Books of reference.....	15.0	15,000
Scientific and professional papers.....	15.0	15,000
Modern instruments.....	15.0	15,000
Temporary, technical, and special services.....	5.0	5,000
Printing and binding.....	20.0	20,000
Other necessary expenses.....	10.2	10,200
Total.....	100.0	100,000

Mr. Chairman, if you gentlemen are interested further, we have here in connection with this matter Col. Malone and Col. King. If you want any further information as to what the classes are doing at these schools and what the War Department contemplates doing at the service schools, they will be glad to testify.

I would like to add one word. Col. King has called my attention to a point I had missed, and that was to the effect that the school at Camp Zachary Taylor must be moved to Camp Knox, under congressional requirements, during the fiscal year.

The CHAIRMAN. The law says we can not hold Camp Taylor beyond the 1st of July, 1921.

Col. HICKMAN. Yes, sir.

Mr. MCKENZIE. Would not the expense of moving that come out of some other appropriation?

Col. HICKMAN. Yes, sir.

Col. KING. The point is that before the end of the year 1921 the school will not be at Camp Taylor, but will be at Camp Knox. It will probably be moved in August and September of this year.

The CHAIRMAN. Would it not be well to put language in the bill so that it shall apply to Camp Zachary Taylor or Camp Knox?

Col. HICKMAN. Yes, sir; that will be helpful.

Mr. GREENE. When is it expected that the next year's instruction will begin?

Col. KING. In October. We plan to move the school in the interim between the graduation of the present class and the intake of the next class, provided the construction at Camp Knox is sufficiently under way to enable us to do that. The construction department has already arranged for the contractors to go ahead.

Mr. GREENE. What is the length of the course, about 10 months?

Col. KING. Yes, sir.

Mr. GREENE. Have you now arrived at anything like a definite estimate as to how many officers you will be able to take in this coming year?

Col. KING. We have a class of 84 this year, and we hope to be able to take, if the intake in the Army is sufficient, from 125 to 150 next year. In other words, we want to get every man who is commissioned in the Army. If there are that many, we hope to be able to take in that many, but we will not be able to take in any more, because the overhead will be too great.

Mr. GREENE. That will not enable you to realize what I had at one time hoped was the original intention—that is, that all the junior officers, whether admitted under the reorganization or already in, would sooner or later get an opportunity to go through the basic courses.

Col. KING. Eventually, everyone of them will have that opportunity. If the intake this year is so great as to swamp the capacity of the school we will have to divide it into two courses instead of having it in one course, but each one of them will have the chance.

Mr. GREENE. Giving the preference to new men anyway, because they have not become broken in, while the regular has to some extent been broken in.

Col. KING. The preference will be given to those of least experience; they will go there first.

The CHAIRMAN. Col. Malone, is that equally true with regard to the Bennings School?

Col. MALONE. Yes, sir; we expect 530 students there this coming year.

Col. HICKMAN. I think you gentlemen will see the finest results in the world coming from this school situation.

The CHAIRMAN. How are your accommodations down there.

Col. MALONE. We have no accommodations there. I will, if the committee will allow me, later ask for some construction, and also for an amount to complete the sewage, and all that sort of thing.

The CHAIRMAN. That will come under the Quartermaster General's Department, the Construction Division?

Col. MALONE. Yes, sir.

Gen. LORD. Now, Mr. Chairman, if you will turn to page 2 you will find an item under the heading of "Office of the Chief of Staff" for the Army War College, and Maj. Gowen can give you the information about that.

The CHAIRMAN. Major, I see you are asking for an increase of \$3,000 for this item. The amount of the appropriation last year was \$9,000, and now you are asking for \$12,000?

Maj. GOWEN. Yes, sir.

The CHAIRMAN. Will you kindly explain to the committee the necessity for that increase—the reason for it?

Maj. GOWEN. The average number of students we had had at the old Army War College up to the beginning of the war was less than 25 per year, and the number of instructors was about six or seven per year. In addition to that there were two directors. We have had this year 22 instructors and directors, and we started with 25 students, and now we have 88. That is three and a half times the number of students we had there in former years. It is the present plan to keep between 90 and 100 students per year at the General Staff College, which is the new name for the old Army War College.

This \$3,000 increase is asked for to cover the increased additional expenses for the purchase of books of reference and textbooks for the library and increased expenses on account of having special lecturers, who are civilians, men of note in civil life, whom we hope to have come to the college and lecture to the students, and we have had 14 of those lecturers this year. That has been in the appropriation bill for some time, but it has never been taken advantage of to a very great extent. It is hoped to correct that now and have a great many more of those men come to the General Staff College and orient the men in the General Staff College as to what the different industries can do in civil life and to keep them in touch with men who are familiar with the situation in a foreign country, and give them, possibly, information that our intelligence section could not get.

The CHAIRMAN. Are these gentlemen paid an honorarium, or are they just paid their expenses?

Maj. GOWEN. There are both. On an average we have been paying \$50 per lecture, principally for expenses. In some cases it covers the expenses and in some cases it does not. Two or three of these gentlemen have declined to accept any money at all, and some of them have come some distance to lecture to the students in the college at their own expense and have given their services to the General Staff College for that purpose.

Mr. MCKENZIE. Did you spend all the money we gave you last year?

Maj. GOWEN. We will, sir. In order to get along this year we have had to exercise the greatest economy. I have not allowed even a box of paper fasteners to be purchased without my order. We have dispensed with the purchase of ice during the last five months in order to get along, and have suspended the purchase of a lot of books we needed for the library. The Military Intelligence Section of the General Staff had been for the last few years purchasing books for the library, but this year their appropriation was cut down and the expense of that came back on us. I had to suspend the purchase of a large number of books in order to keep within the appropriation, but within the past few weeks we have seen our way clear and have ordered the purchase of a lot of books which we had suspended before.

Mr. MCKENZIE. There will be no deficiency in this item?

Maj. GOWEN. No, sir; there will not be any deficiency.

The CHAIRMAN. Is the money practically all obligated?

Maj. GOWEN. No, sir; I think not.

Gen. LORD. The unallotted balance now is \$5,043.84.

The CHAIRMAN. More than one-half of the appropriation?

Gen. LORD. That does not mean that they may not have obligations outstanding that have not been reported.

Maj. GOWEN. I think about \$3,000 was unobligated on the 1st of March.

Mr. McKENZIE. I want to ask you about the part of the item at the bottom of page 2, "including \$25 per month additional to regular compensation to chief clerk of division for superintendence of the War College Building." How does that happen, Major?

Maj. GOWEN. That has been in the Army appropriation bill for some years. It is paid to the chief clerk of the Army War College for his duties as superintendent of the building, looking after the cleaning and the watchman force, and different things of that sort that would come normally under the supervision of a building superintendent.

Gen. LORD. That was first covered in law by the act of May 11, 1908.

Mr. McKENZIE. Could not that be covered by increasing this man's salary?

Maj. GOWEN. He is not on the civil service list. That would bring in the question of his rank there as to the matter of promotion, if he got that increase in his regular salary.

The CHAIRMAN. May 11, 1908, was the first time we allowed that amount, I see by the reference you have here.

Mr. GREENE. In this proposed wording I notice you also provide for the pay of a chief engineer at \$1,400.

Gen. LORD. If you will turn to page 42, Mr. Greene, you will find that they have nearly consolidated under this paragraph the appropriation for maintenance, which you will find on page 42. But there has been no change in the amounts called for.

The CHAIRMAN. I am informed that the chief clerks of all the departments get a little additional allowance for looking after the building, supervising the work of the clerks, and so forth; so that this allowance here is in keeping with the law and custom that prevails in the other departments.

Mr. GREENE. Why is it that the Army War College maintenance comes in the Army appropriation bill, in the nature of items which ordinarily would be carried in the legislative, executive, and judicial appropriation bill, such as elevator men, and employees of that kind?

Gen. LORD. I do not know. This provision for maintenance first appeared in the act of March 2, 1903, and it has been paid ever since in the Army appropriation bill.

The CHAIRMAN. The Army War College is under the General Staff, and we appropriate for all the employees of the General Staff here of in Washington in this bill.

Mr. GREENE. I know; but you see if the General Staff officers are in the State, War, and Navy Building, they have the advantage of the services, for instance, of the elevator man in that building to take them up and down stairs in that building, but we do not appropriate for the elevator man there.

The CHAIRMAN. We appropriate for all the clerks and messengers and gardeners of the General Staff here in Washington, and that has been carried in the Army appropriation bill for many years.

Gen. LORD. The legislative, executive, and judicial appropriation bill, neither in its statutory employees nor in its additional employees, carries any force whatever for the office of the Chief of Staff or for the General Staff. They are carried in the item for pay of the Army in the appropriation bill which is handled by this committee. I was told it was the intent of this committee to amend its phraseology

to eliminate the principal title there, "Office of the Chief of Staff," and to change the subtitle, "Army War College" to "General Staff College." This will no longer, with that stricken out, be a part of the office of the Chief of Staff, and it will be to that extent a field organization, like any other of your schools.

Mr. GREENE. I am trying to get at the reason for this. I do not object to the item because we have been carrying it all the time. What is the difference between that and the legislative, executive, and judicial appropriation bill carrying civil-service employees of the State, War, and Navy Building, where the elevator men take the General Staff officers up to any floor they want to go to? The same thing is true in regard to the firemen. Why do not these people in another Government building in the same city, occupying the same relative position as to Government employment that those men do, go on the same pay roll?

Gen. LORD. It is an anomaly. There is another one that we carry in the appropriation for pay of the Army, and that is an expert accountant for the office of the Inspector General. He legitimately belongs in the legislative, executive, and judicial appropriation bill, and we would think, as a matter of orderly procedure, that the force in the office of the Chief of Staff should be carried in that bill, and when it was under the Chief of Staff, that it also would be carried in that bill. But the amended phraseology will make this a field school or college, just as Leavenworth is a field school or college, so there would be no longer an anomalous condition as far as this particular appropriation is concerned.

The CHAIRMAN. You desire to change the language on page 2 from "Army War College" to "General Staff College"?

Maj. GOWEN. That is correct; yes, sir.

The CHAIRMAN. Then you also desire to change the wording of the paragraph?

Gen. LORD. Yes; and eliminate the words "Office of the Chief of Staff."

Col. HICKMAN. We want to separate it from the Office of the Chief of Staff.

Maj. GOWEN. This is the wording which we propose:

For expenses of the General Staff College, being for the purchase of the necessary stationery; typewriters and exchange of same; office, toilet, and desk furniture; textbooks; books of reference; scientific and professional papers and periodicals; printing and binding; maps; police utensils; the necessary fuel for heating the General Staff College Building and for lighting the building and grounds; employment of temporary technical or special services and expenses of special lectures; and for all other absolutely necessary expenses, including \$25 per month additional to regular compensation to chief clerk for superintendence of the General Staff College Building; also for pay of a chief engineer at \$1,400; an assistant engineer at \$1,000; a carpenter at \$1,000; four firemen at \$720 each; an elevator conductor at \$720; \$26,620.

Gen. LORD. That would be so that the provision at the top of page 2 for the maintenance of the Army War College would be eliminated, that is, consolidated with the same amounts and the same personnel, with the General Staff College.

Mr. DENT. Would that take care of the heating of the building, if you eliminate that item and substitute what you propose?

Maj. GOWEN. Yes, sir; the heating and lighting of the building is included in the changed wording.

The CHAIRMAN. That would then be carried in this part of the bill, instead of on page 42?

Maj. GOWEN. Yes, sir.

Gen. LORD. That would bring all of the General Staff College appropriations under one heading on one page.

The CHAIRMAN. It is really a transposition of the items.

Maj. GOWEN. It is a combination of the two.

The CHAIRMAN. It does not change the amounts involved?

Maj. GOWEN. No, sir; except the increase from \$9,000 to \$12,000 which is asked for.

Gen. LORD. That is not due to any change in the pay of the employees.

Mr. GREENE. Then the subtitle "Office of the Chief of Staff," on page 2, would come out.

Gen. LORD. Yes, sir.

Mr. GREENE. Would it go anywhere else?

Gen. LORD. No, sir.

The CHAIRMAN. You will not want to eliminate those words "Office of the Chief of Staff," will you?

Col. HICKMAN. We want them to come in on page 3, as a subhead there.

Gen. LORD. Mr. Chairman, Col. King, of the Field Artillery, is here, and he can explain to you the item at the top of page 5, "Field Artillery activities," if you desire him to do so.

The CHAIRMAN. We will be glad to have an explanation of that now. That is a new item that is submitted, is it Colonel?

Col. KING. Mr. Chairman, these are hold-overs of the war. We never had organizations of this sort prior to the war. They were developed as a war necessity, and are located, as the item indicates, at Fort Sill, Okla., Camp Bragg, N. C., and Camp Knox, Ky., all reservations where we had considerable ground available for the training of field artillery, and at which it is expected the Field Artillery brigades which are parts of divisions at whose home station there is no room for field training will be sent, and either stationed apart from the division or rotated through the instruction centers.

It is also contemplated that all National Guard Field Artillery of the country and all of the Field Artillery reserve officers of the country shall come there for their training, at these field artillery centers.

We then desire to maintain at each of these places a small instruction personnel and the material for the carrying on the school.

The \$2,000 we have asked for for each of these places is to buy such material as we may need to build trenches, gun emplacements, and things of that sort for the instruction of the officers and also for camouflage, to provide proper instruction in communication, including radio, and to provide indoor ranges which we developed during the war and which we found to be extremely interesting and valuable in training officers in the observation of fire when we had only a very short time to do it. It is a miniature town in which targets are provided which look as nearly as possible like the real thing on the ground. It costs only a small amount of money to maintain it. We desire to keep these three places going.

The CHAIRMAN. How much will you require annually for this proposed feature if it once gets started?

Col. KING. During the war these places working as intensively as they were working cost us about \$50,000 a year. Now, if we utilize these places all summer long actively for the reserve officers and the National Guard organizations, I think it would require \$2,000 per year at each of these places.

The CHAIRMAN. So that this amount will practically be duplicated every year?

Col. KING. It is so expected; yes, sir.

Mr. GREENE. This item like the one in connection with the service schools proceeds on exactly the same theory, that all the overhead is taken care of by the Regular Army appropriation so that you do not have to work in anything but the incidental supplies or operations which make an extra cost.

Col. KING. At the training centers there is absolutely no overhead. Every officer and man who is a part of the instruction personnel belongs to an organization at the station and there is no overhead whatsoever.

Mr. GREENE. I mean overhead in the sense that the collective cost of administration and maintenance generally of personnel is taken care of through the other appropriations which logically support it.

Col. KING. Absolutely.

The CHAIRMAN. This amount you ask for only provides for the purchase of material?

Col. KING. Yes, sir.

Mr. GREENE. But it represents in the popular mind the expense of these places?

Col. KING. Yes, sir.

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Friday, March 26, 1920.

TERRITORY OF ALASKA, ROADS, BRIDGES, AND TRAILS; TELEGRAPH
AND TELEPHONES.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. The governor of Alaska is with us this morning. There are two items in the bill that relate in particular to that territory. One is the item in reference to roads, and the other is the item in reference to the telegraph service in Alaska. The first item, on page 52, provides, "For the construction, repair, and maintenance of military and post roads, bridges, and trails, Territory of Alaska, to be immediately available." The appropriation last year was \$100,000, and the same amount is asked for in this bill by the War Department.

STATEMENT OF MR. THOMAS RIGGS, JR., GOVERNOR OF THE TERRITORY OF ALASKA; COL. W. P. RICHARDSON, COL. GEORGE P. PILLSBURY, LIEUT. COL. J. O. MAUBORGUE, AND CAPT. A. BLISS ALBERO.

Col. PILLSBURY. Mr. Chairman, a supplemental estimate for \$322,000 was submitted, making a total of \$422,000.

The CHAIRMAN. When was that supplemental estimate submitted?

Col. PILLSBURY. That was submitted in January, I am quite certain. I understood it was before the committee.

The CHAIRMAN. I find it was submitted on February 16. We will be very glad to hear you, Gov. Riggs.

Mr. RIGGS. Mr. Chairman, I desire this morning to bring to the favorable attention of the committee the estimate and the supplemental estimate submitted by the War Department. Briefly, the largest road construction agency in Alaska is that of the Alaska Road Commissioners. They get their money under the War Department, in two ways. They have a direct appropriation that is made by Congress which, for the fiscal year 1920, was \$100,000. They also receive 65 per cent of the so-called Alaska fund, which is derived from trade licenses collected in the Territory, and which during the past year amounted to approximately \$180,000.

The CHAIRMAN. Before you proceed further, may I ask you who the road commissioners of Alaska are?

Mr. RIGGS. The present president is Maj. William H. Waugh.

The CHAIRMAN. Is he a Regular Army officer?

Mr. RIGGS. He is a temporary engineer officer who retires on the 30th of June. He is to be succeeded by Lieut. Col. Gotwals.

The CHAIRMAN. Who is a Regular Army officer?

Mr. RIGGS. Who is a Regular Army officer of the Engineer Corps. There is also a disbursing agent, who is not necessarily an engineer officer, and one of the members of the board, who is also not necessarily a member of the Engineer Corps, but who is an Army officer.

This work was inaugurated under Gen. W. P. Richardson, who was for many years the chairman of the Board of Alaska Road Commissioners. Gen. Richardson laid out a most comprehensive scheme of roads and he did some excellent work. He was transferred to foreign duty during the war and was succeeded by the civilian who temporarily took the place of a Regular Army officer. Under Gen. Richardson's direction a comprehensive scheme for the construction of roads was made which I think involved an expenditure of \$7,500,000, and was to extend over a number of years. Then came the war; the appropriations were cut to the minimum, the appropriation for 1920 being not sufficient to maintain the roads already constructed by the Board of Road Commissioners.

For instance, there is the main highway known as the Richardson Highway, extending from Valdez on the coast to Fairbanks on the Tanana River in the interior, the annual maintenance of which should be at least \$100,000 a year.

Col. PILLSBURY. More, Governor, at this time.

Mr. RIGGS. Owing largely to a serious flood which washed out the hardest piece of construction along the road in the Keystone Canyon and near Valdez. To reconstruct this part of the road will cost over \$60,000.

There is another agency in Alaska now engaged in the construction of roads, namely the Territory, which appropriates \$200,000 a year for the construction of roads. We enter into cooperation with the other Federal agencies, and a large proportion of this money is now being expended under the board of road commissioners. If it had not been for the cooperation on the part of the Territory, the board could not have done much work last year. They could not have maintained their organization.

The CHAIRMAN. Does the Territory of Alaska appropriate that much annually?

Mr. RIGGS. \$200,000 annually. It has a biennial appropriation of \$375,000, and then there is an income from other sources of practically \$50,000, which makes the Territorial appropriation amount to about \$200,000 a year.

The CHAIRMAN. That \$25,000 is obtained as a part of the tax on the salmon packing industry, is it not?

Mr. RIGGS. No, sir. That \$25,000 is obtained from 25 per cent of the net proceeds of the sales of timber within the forest reserves. In the forest reserves the Agricultural Department, under section 8—

Mr. MCKENZIE (interposing). Where does the other 75 per cent go?

Mr. RIGGS. Into the Treasury of the United States as miscellaneous receipts. Under section 8 of the public roads act roads within the forest reserves of the Territory have apportioned to them about \$50,000 per annum by the Federal Government for expenditure in cooperation with the Territory. That is all the money we get for the construction of roads in Alaska.

Alaska, as you know, is a great pioneer country, in which 99 per cent of the public land is in Government control. We are dependent upon roads more than any other part of the United States. Our country is generally mountainous or swampy. There are practically those two divisions although there are, of course, good stretches of land where the roads go.

Road building is very difficult in the Territory. The roads are difficult to maintain. Every piece of road that is built develops a new little community, develops new commerce or some resource, and every resource opened up there adds to the Treasury of the United States. We are now paying into the Treasury of the United States every year net about \$7,000,000 over and above what is expended for the Territory.

The roads now constructed by the Alaska Road Commission consists of 1,031 miles of wagon roads, 636 miles of sled roads, and 3,223 miles of trail, a total of 4,890 miles of transportation routes, together with a large number of bridges, some of which are of considerable size.

The CHAIRMAN. Governor, this road building must be done during a few of the summer months, is that not the fact?

Mr. RIGGS. The best season for building roads is in the months of April, May, and June. Then come rains, which make it a little more difficult, but we have July, August, September, and a part of October in which to build roads.

The Territory of Alaska does not benefit by the general terms of the cooperative public roads act, wherein \$100,000,000 annually is appropriated for the construction of roads in the States. The only assistance we get from the United States Government is through the appropriation allowed by your committee and from the roads

within the national forests. So we feel it is most important that you will consider our plea for more roads, and we will lend the greatest support and cooperation possible.

We are thoroughly in accord with the activities of the board of road commissioners and the Army. We work in the greatest harmony and we would like to see the organization perpetuated and given every possible assistance. I have asked Col. Pillsbury and Gen. Richardson to be present this morning to give you any further explanation you desire. You asked me a question the other evening, Mr. Chairman, in which you suggested that some years ago you were promised that you would not have to consider roads in Alaska after the original appropriation. Gen. Richardson, I am sure, will be able to explain that to the satisfaction of the committee.

Mr. FIELDS. All the steel for the construction of bridges in Alaska is shipped from the States, is it not? There is no steel manufactured in Alaska?

Mr. RIGGS. No. As I remember it, only one steel bridge has been constructed by the Alaska Road Commission, the one at Fairbanks. The others are made principally from timber cut on the ground.

Mr. FIELDS. Is there any iron ore in Alaska?

Mr. RIGGS. There is a great deal, but it has never been developed, although it has been carefully examined in connection with proposed iron works to be established either on Puget Sound or in California.

Mr. FIELDS. There are great possibilities of that character in Alaska, are there not?

Mr. RIGGS. There are great possibilities of all character in connection with every mineral known. The question in regard to gold is a serious one. The gold production is almost directly dependent upon roads, and farming, too.

Mr. FIELDS. How is the agriculture of Alaska developing? Are the people there taking to that considerably?

Mr. RIGGS. It has developed so that it now practically takes care of all the local needs of the Territory, and in the interior, at Fairbanks, they are beginning to manufacture flour. In the course of a few years they will probably supply all the interior of Alaska with home-made flour.

Mr. FIELDS. What are the principal crops?

Mr. RIGGS. Of the cereals there are oats, barley, rye, and wheat; all the vegetables and berries.

Mr. FIELDS. What is the average production per acre of oats and wheat?

Mr. RIGGS. I am not very much of a farmer, but the chief of the Agricultural Service up there told me a short time ago that it exceeded the yield in Minnesota; that is all I can tell you about it. I can get that for you. The yield per acre is very large. We have a double growing season. The longer days make a quicker growth than in the States.

The CHAIRMAN. Would it be agreeable to you, Governor, to take up the item for the telegraph system now, or after Gen. Richardson has talked to the committee about the roads?

Mr. RIGGS. I would like to take it up in order.

Mr. McKENZIE. Governor, will \$100,000, the usual appropriation, take care of the maintenance of such roads as you now have in Alaska for the next fiscal year?

Mr. RIGGS. No, sir. The estimated cost of maintenance of the roads of the Alaska Road Commission is \$279,000.

Mr. McKENZIE. You get something like \$200,000 from your own resources?

Mr. RIGGS. Yes.

Mr. McKENZIE. If you used \$100,000 of that in connection with the \$100,000 appropriated, or supposed to be appropriated by Congress, would that take care of the maintenance without extending any new line of road?

Mr. RIGGS. May I read you a paragraph out of Maj. Waugh's report? He says:

When the estimate for the current fiscal year was submitted, the items were reduced to the lowest limit on account of conditions. This estimate as presented by the commission was for \$384,000, all of which was for maintenance and improvement of existing roads and trails. Work for improvement is necessary to partially meet a traffic demand which is increasing and which has existed for several years. It was estimated that actual maintenance would require not less than \$279,000. That estimate was reduced by the War Department to \$300,000. Congress appropriated, however, only \$100,000, with the result that the commission was absolutely compelled to abandon maintenance on certain sections of road and to reduce its work to much below an economic or engineering factor of safety.

Mr. McKENZIE. Leaving the question of maintenance of these roads, which I assume lead from the main towns in Alaska and connect with those other towns in the interior, connecting those towns with the main towns along the coast, have you any plan or design for any particular road you would build, or is it just a general idea of having an appropriation for the extension of the roads?

Col. PILLSBURY. I have a map which will show you the detail in connection with that.

The CHAIRMAN. I have here a statement from Maj. Waugh, who came to Washington some weeks ago in order to appear before the committee. When he was told that we would probably not take up the Army appropriation bill for some time he left this statement with me, and I would like to insert it in the hearing at this point.

(The matter referred to is as follows:)

WAR DEPARTMENT.
Washington, February 16, 1920.

Hon. JULIUS KAHN.

*Chairman Committee on Military Affairs,
House of Representatives.*

SIR: The estimates for the construction and maintenance of military and post roads, bridges, and trails, Alaska, for the fiscal year 1921, as originally submitted to Congress proposed an appropriation of \$100,000. Further consideration of the matter with the board of road commissioners for Alaska developed the necessity of increasing that amount materially, and a supplemental estimate for \$322,200, making the total amount requested for the fiscal year 1921 for that work \$422,200, was therefore submitted to Congress on the 23d ultimo, and printed in House Document 635, Sixty-sixth Congress, second session.

Maj. W. H. Waugh, Engineers, president of the board, advised that he conferred with you upon the subject and that it was arranged that a statement should be furnished you for printing for the use of the Committee on Military Affairs, showing the proposed distribution of the funds and the necessity for appropriating the full amount requested.

I have the honor to inclose herewith a statement of the kind furnished by him.

Very respectfully,

NEWTON D. BAKER,
Secretary of War.

STATEMENT BY MAJ. W. H. WAUGH, PRESIDENT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA, CONCERNING ESTIMATE FOR CONSTRUCTION AND MAINTENANCE OF MILITARY AND POST ROADS, BRIDGES, AND TRAILS, ALASKA.

1. The Alaska Road Commission has constructed, since its organization in 1905, about 1,031 miles of wagon road, 636 miles of sled road, and 3,225 miles of trail, a total of 4,890 miles of transportation routes, together with a large number of bridges, some of which are of considerable size. The total cost for all construction and for 14 years maintenance to July 1, 1919, was \$4,923,576.93. This amount includes funds from all sources.

2. Four thousand six hundred miles of the routes form a connected system reaching from the coast to the Arctic Circle and to the Kotzebue Sound country above Bering Straits, and affording communication with practically every settlement in Alaska, except those in the southeastern part of the Territory and the isolated coast towns. The population of Alaska is estimated at 32,000 whites and 23,000 Indians, a total of 55,000. While the population is small, it produced in 1919, \$1,600 for every man, woman, and child, white and Indian, in the Territory. During the open months of the summer season, the roads connect the settlements with navigable waters which then afford transportation to many parts of the interior, but during the winter or closed season, the roads furnish the only means of communication and all interior mail, express, and freight is handled over them. Two mails each week leave the coast terminals of the main road system for Nome, 1,200 miles away. Point Barrow, 500 miles farther north, is also supplied over the system, the mail for that locality which is 300 miles north of the Circle and for the intermediate points, being taken to the end of the Alaska Road Commission trail and thence over the ice along the shores of the Arctic Ocean.

3. The roads and trails are practically all military in character and their military importance is the same as the military importance of the Territory. There are no other lines of all-year communication. There is no county government in Alaska, and the Federal Government extends its posts to the different sections. The efficient administration of the posts and the maintenance of the military telegraph system depend on the efficiency of the highways.

4. The roads of the commission are all lightly constructed, and are subject to the severest weather conditions. Light construction has been necessary on account of the limited funds available, and the necessity of building as much road as possible in the quickest time, to provide some means of transportation in a rapidly developing country where there were no transportation facilities other than those furnished by the few more or less navigable streams. Attention is invited to the fact that the road system is a going concern. It is in actual operation and practically every foot of road and trail is used as a mail route and furnishes absolutely the only means of communication in a vast territory equal to one-sixth the area of the United States.

5. When the estimate for the current fiscal year was submitted, the items were reduced to the lowest limit on account of war conditions. This estimate as presented by the commission was for \$384,000, all of which was for maintenance and improvement of existing roads and trails. Work for improvement is necessary to partially meet a traffic demand which is increasing and which has existed for several years. It was estimated that actual maintenance would require not less than \$279,000. That estimate was reduced by the War Department to \$300,000. Congress appropriated however, only \$100,000 with the result that the commission was absolutely compelled to abandon maintenance on certain sections of road and to reduce its work to much below an economic or engineering factor of safety.

6. Army act appropriations are not the only source of funds for the work of the Alaska Road Commission. The Alaska fund, obtained from the various trade and occupational licenses outside of incorporated towns in Alaska is also available. The road commission receives 65 per cent of this fund, their share amounting to approximately \$125,000 per year. Since the establishment of the commission the amount received from the Alaska fund has practically equalled the amounts received from Congress and is a continuing appropriation provided by Congress in the act creating the Alaska Road Commission. The Territory of Alaska now has a law which provides for the closest cooperation between the Federal and Territorial road authorities. Approximately 80 per cent of the Territorial funds will be expended under the supervision of the Alaska Road Commission next year. The Alaska Road Commission, to meet the desires of the Territorial government as far as possible, allots the Alaska funds to those judicial divisions within which the funds are collected and to sections of short roads, constructed to serve communities worthy of development, but not reached by the main military road system. The Alaska funds are used in part of cooperation work with the Territory. Funds of the Department of Agriculture are also available within the national forests which include the southeastern archipelago

and a large portion of Kenai peninsula, or the region in the vicinity of Seward, but they can not be used on the military roads and trails.

7. The best working season in Alaska is generally from May 15 to July 15. Usually because of lack of funds, the commission is not in a position to start its work until July 15 or later. This delay is most expensive and necessitates the handling of work in a rush with insufficient organization or preparation. The lateness of appropriations is a greater handicap to successful work by this board than any other factor. This year through shortage of funds, we lost two months of the most favorable weather when there was a good supply of labor available. To secure the greatest return for money expended this commission should know a year in advance what can be definitely counted upon in the way of funds. It is an actual fact that more can be accomplished with \$1 in the early and dry part of the season than with \$2 two or three months later after heavy rains set in.

8. July 1, 1919, we had a balance in the Alaska fund of \$63,000; On July 11 Congress appropriated \$100,000, making a total of \$163,000 available by the middle of the month. With the exception of approximately \$25,000, all of the above was devoted to maintenance. Of the \$25,000 excepted, \$15,000 was allotted for improvement of existing roads and trails, being used in cooperative work with the Department of Agriculture and the Territory of Alaska. We secured \$142,000 from the Agricultural Department and the Territory for cooperative work. In addition, the Territory is cooperating to the extent of \$35,000 in other work handled by the commission. If it had not been for this cooperation we would have lost the greater part of our organization, one of the most valuable and useful assets of the commission.

9. As a whole the roads are not in as good condition as they were a year ago. Absolutely no maintenance work was possible on many hundred miles both of roads and trail. The full effect of deferred maintenance is not felt at this time, nor will its full force be realized before a year from now. On some sections of road there will be little deterioration through neglect; on others entire reconstruction will be necessary. The condition of the winter trails will not be known at the Juneau office before spring, as many of these trails are only traveled during the winter months. It will be impossible to make even an approximately reliable estimate of the actual loss sustained owing to limited funds and deferred maintenance, before the end of next season's break-up. This loss will amount to a very substantial sum. To it must be added a certain loss which is borne by the communities along our routes, which can not be estimated.

10. For the most economical and effective results, the commission should have a continuing appropriation for not less than five years in order that a fixed and definite program could be adopted. Such a plan would result in a great saving in actual money, would permit work at the proper season, and allow proper planning of operations. As previously stated, starting projects late in the season with insufficient funds for completion, produces far less benefit than can and should be obtained from the expenditure. For example, the Iliamna Bay Road was started late in July, 1917. Six thousand seven hundred and eighty-one dollars and fifty-two cents was expended and 10 miles of trail were constructed. Approximately \$1,200 of this amount was the cost of sending an outfit to the work and getting it back. The same cost will be incurred when work is resumed. Two miles more, estimated to cost \$2,000, remained to be completed. If the work could have been finished in 1917, the cost would have been approximately \$9,000. Next season repairs to the present trail will amount to about \$1,800. Two thousand dollars is estimated for actual work and \$1,200 for transportation and organization of construction crew. This would make a total cost of about \$12,000 on a project which could have been completed in 1917 for \$9,000. In the meantime the uncompleted work has been of little value. An analysis of the Ophir-Tacotna Road will show similar results but on a larger scale. On other projects the same conditions will obtain. These particular projects are designated because they are simple to show. They are not mentioned to indicate criticism of the former members of the commission, as the present board has had similar painful experiences, which will become equally apparent in due time.

11. The full amount of \$422,200 asked for in this estimate is necessary and the investment will show a profitable return to the Government. Gold production has fallen from \$16,700,000 in 1916 to \$9,000,000 in 1919. For the United States during the year 1918- \$60,000,000 in gold was used in the arts and manufactures, but the total of the gold output was but \$50,000,000. For 1919 the use of gold in manufactures will show an increase but only \$45,000,000 was produced. Owing to the increased cost of supplies, wages, materials, etc., it is now unprofitable to work ground in Alaska which produced a profit in normal times. By keeping up the road system, and improving transportation facilities, the present gold output will be increased and the work will aid greatly in the mining, agricultural, and general development of the Territory. The proposed distribution of the appropriation is as follows:

Proposed distribution of Alaska road appropriation for 1921.

Southeastern Alaska:	
Juneau-Eagle River and Auk Bay extension (14 miles).....	\$5,000
Portage Road (10.8 miles).....	5,000
Haines-Pleasant Camp Road (47.5 miles).....	35,000
Salmon River Road (12 miles).....	20,000
	<hr/> \$65,000
Southwestern Alaska:	
Seward-Kenai Lake Road (8 miles).....	5,000
Mile 29-Moose Pass Road (29.5 miles).....	5,000
Talkeetna-Cache Creek Trail (47 miles).....	10,000
Herenden Bay Portage Trail (12 miles).....	12,000
Iliamna Bay Road (12 miles).....	5,000
	<hr/> 37,000
Nome district:	
Nome local roads.....	10,000
Safety-Bonanza and Sinrock Ferries.....	2,500
Fort Davis-Cape Nome Road.....	5,000
Davidson's Landing-Taylor Creek.....	2,500
	<hr/> 20,000
Valdez-Chitina-Fairbanks Road	250,000
Yukon district:	
Fairbanks-Fort Gibbon sled road (410 miles).....	3,000
Circle-Miller House Road (49 miles).....	3,000
Fort Gibbon Kaltag Trail (257 miles).....	1,000
Hot Springs-Sullivan Creek Road (9 miles road; 6 miles trail)...	3,000
Fort Gibbon Trail (16.4 miles).....	1,000
Salchaket-Caribou Creek sled road (46 miles).....	300
Ruby-Long Creek Road (30 miles).....	3,000
Coldfoot-Wiseman sled road (11.25 miles).....	3,000
Ophir-Tacotna Road (Ophir District 23.5 miles).....	10,000
Fairbanks Bridge (maintenance).....	100
Fairbanks-Ester Road (13 miles).....	800
Gilmore Summit Road (6 miles).....	3,000
Fairbanks-Chena Hot Springs Trail (64 miles).....	
Olness-Livengood sled road (54 miles).....	
Smallwood Creek Road (Fairbanks District).....	
Steel Creek Road (Fairbanks District).....	
Birch Hill Road (Fairbanks District).....	1,000
Summit Fish Creek Road (Fairbanks District).....	
Gilmore Creek Road (Fairbanks District).....	
Rampart Eureka Road (28 miles).....	3,000
Eagle-O'Brein Creek Road (17 miles).....	13,500
Lignite-Kantishna Road (45 miles).....	1,500
Brooks Terminal Road (60 miles).....	
	<hr/> 50,200
Total	<hr/> 422,200

The above represents an allowance for the entire system of \$86 per mile.

12. It is respectfully requested that such funds as may be appropriated by Congress be made available immediately upon passage of the act for the reason that the small appropriation approved July 11, 1919, is inadequate to take care of present maintenance requirements and roads are deteriorating rapidly on account of the inability to make small repairs before they assume large proportions.

13. Alaska road work is severely handicapped by a chronic shortage of labor, the most severe natural conditions to be overcome, the very high price of supplies and materials when finally delivered on the site of the work, and the extremely short working seasons in many localities. When the uncertainty of appropriations is added to the above, the problem is indeed serious. Anything which can be done to help this situation will greatly aid in the development of the Territory.

The CHAIRMAN. Gen. Richardson, we will be glad to hear from you now.

Col. RICHARDSON. Mr. Chairman, I wish to say that I have been separated from the work in Alaska now for nearly three years, and I am not quite as closely in touch with the recent developments

and the work that has been done as I would like to be. However, there is no very considerable change that has taken place, I believe.

I understand that Gov. Riggs referred to a matter a moment ago and that he desired that I explain the situation that he thought was not entirely understood by the committee, which was indicated by the question asked in respect to the recommendation of further appropriations by the committee.

The CHAIRMAN. As I recall, probably 8 or 10 years ago—perhaps longer—when this matter of the construction and maintenance of military and post roads in Alaska was before the committee the statement was made that that appropriation would be asked for only a limited number of years, and that the request for money for that purpose would cease, I think, along about 1916 or 1917. But the bill has since then continued to carry some amount for this purpose, and the older members of the committee have wondered whether there is any disposition to continue the application for funds for this purpose. We would like to hear your statement in connection with that matter, Colonel.

Col. RICHARDSON. I would like to go back a little and state that the road commission found itself charged with a duty in Alaska and with no funds with which to perform that duty, a very limited fund coming from the taxes in the Territory, and no other.

The Secretary of War being informed of this situation, authorized an estimate to be put in the Army appropriation bill. The first estimate that was submitted went before the Senate. I did not have much to do with that. I did not have the direction of it. Senator Nelson, however, procured the passage of this bill without any effort on the part of the War Department, or knowledge or influence whatever by the War Department. The bill was passed entirely without consultation with the War Department.

But when it was passed the Secretary of War undertook to carry out the duty which the act imposed. Senator Nelson was greatly interested in seeing the work succeed. He had been up there and observed the great need for roads for the benefit of the people up there. So he undertook to help the road commission out by first getting an item added to the Senate military bill for the fiscal year 1907, the amount being \$150,000. That was accepted by the House committee in conference. Thereafter I submitted an estimate, with the approval of the Secretary of War, and I appeared before your committee in connection with that estimate. The amount varied from year to year, depending somewhat on the developments going on in Alaska, the troubles we had with the roads there in the way of destruction by flood, and also somewhat on the temper of the committee itself. The committee recognized the need—I am talking of this committee—but at the same time raised the question a number of times as to why the Committee on Military Affairs of the House should be charged with the duty of appropriating money for the construction of roads in Alaska.

I explained that this was an emergency situation, and if we were charged with this duty we ought to be given something to carry out the duty with. The committee were good enough to look with favor on it.

It was a frontier country, and considering the fact that the Army had already done this kind of work on the frontier, the committee gave support to the commission.

However, this item was always subject to a point of order on the floor of the House. But that point was not raised for a number of years, and the committee, apparently, and the Congress, appeared, at least to my mind, and to that of the Secretary of War, to accept the situation and continued to make the appropriation.

The point of order, however, was finally raised on the appropriation bill for 1916. I now come to the point that I want to elucidate. That point was made against an item of \$500,000.

The CHAIRMAN. Mr. Gordon, of Ohio, as I recall, made the point of order.

Col. RICHARDSON. Yes. I talked to the Secretary of War about it, and to a member of the committee who is not here this morning but who was good enough to interest himself in it, and he suggested that this be submitted to the Secretary of War, which I did, and he accordingly wrote a letter to this effect, that in case the committee saw fit and would approve of this estimate of the appropriation for the total amount therein asked for, which was necessary to carry out work already partially constructed and would go to pieces without money to continue it and to complete it, that he would not submit any future estimates for appropriations for road work in Alaska unless Congress should enact a provision authorizing him to submit these estimates, so it would not be subject to a point of order. You will find, I think, in the Army bill that passed in 1918, for the fiscal year 1919, a provision providing that the Secretary of War is hereafter authorized to submit such estimates as are necessary for the proper protection and maintenance of the roads. In other words, Congress fulfilled the conditions that the Secretary of War requested and desired, so he would not be in the position of submitting estimates for funds and have the estimate turned down on a point of order. I think that is the situation in connection with that matter.

The CHAIRMAN. Your recollection, then, is that the permanent law was enacted authorizing the Secretary to make estimates to Congress for this purpose?

Col. RICHARDSON. Yes, sir.

The CHAIRMAN. Your recollection is that that was in the Army appropriation bill for the fiscal year 1919?

Col. RICHARDSON. That is my recollection; I am not sure of that date.

Mr. DENT. I think it was put in the bill, but I am not sure whether it was finally enacted into law.

Col. PILLSBURY. You will find it in 40 Statutes, page 863, under date of July 9, 1918.

Col. RICHARDSON. Before closing, Mr. Chairman, I would like to say that the principal expenditure has been of moneys appropriated by the Military Committee, and almost the entire expenditure on the main overland route from the coast, touching the coast at Valdez, and connecting at another place with the Copper River Railroad through to Fairbanks, and an extension of the trail clear through to Nome. That is considered by us as a military road. It follows the line of the telegraph, and while it is used interchangeably for the business of the commission, the total expenditure on that road is equal to the total amount of money appropriated by the committee. I bring out that point to emphasize the fact that it is a military road for which this money has been spent, as we consider it.

The CHAIRMAN. What is the custom in Alaska? Do the prospectors go out, and then, finally, when they make a strike or discovery, does the road commission construct a trail to the location of the strike?

Col. RICHARDSON. Yes, sir.

The CHAIRMAN. And if the mineral is found in sufficient quantity to work it, do you build a road to that point?

Col. RICHARDSON. Yes, sir; as far as we possibly can with the funds available.

The CHAIRMAN. You have about 900 soldiers in Alaska, officers and men?

Col. RICHARDSON. Yes, sir.

The CHAIRMAN. Do you distribute them to these various mining locations, or do you keep them pretty well along the coast?

Col. RICHARDSON. They are distributed in four or five permanent military posts and along the line of the telegraph for the maintenance and operation of that telegraph line.

Col. Pillsbury is here, and he was with me as the engineer officer of that board in the early days. He is familiar with the beginnings of this road and of the military road across the country, and knows the difficulties we had to contend with. He performed a wonderful service himself in locating that road 400 miles long, crossing many mountain ranges and streams. He has recently taken it up again since he has been here, and he can give you any further details you would like to have.

Mr. LENT. Under the head of "Construction and maintenance of military and post roads, bridges, and trails, Alaska," in the act referred to, the word "hereafter" is used.

The CHAIRMAN. So it is a part of the permanent law and is not now subject to a point of order.

Mr. RIGGS. May I merely state, Mr. Chairman, for the information of the committee that quite a large amount of this estimate is for the construction of roads tributary to the Government railroad to make the Government railroad self-supporting.

The CHAIRMAN. In the nature of feeders for the railroad?

Mr. RIGGS. Yes, sir.

Col. RICHARDSON. May I suggest this, that the War Department is in opposition to asking the Committee on Military Affairs for an appropriation for the construction of feeders for the Government railroad. We want to construct a military road, over which people can travel without having to pay the fare charged on the railroad. It is quite beyond the province of this committee, I think, to appropriate money to build feeders for the Government railroad, because that would run into many millions of dollars, and the railroad is practically useless without the feeders, and the War Department would be in opposition to asking money to build those feeders.

The CHAIRMAN. Col. Pillsbury, we will be glad to hear you now. Will you kindly state to the reporter your full name and also the position you occupy?

Col. PILLSBURY. George P. Pillsbury, Corps of Engineers.

The CHAIRMAN. Are you a member of the Road Commission of Alaska?

Col. PILLSBURY. No, sir. I had the honor to be a member several years ago, at the inception of the project.

The CHAIRMAN. We will be glad to hear you, Colonel.

Col. PILLSBURY. I wish merely to give you a general outline of the road system and then answer any question in connection with the details of it.

The road system comprises a main road, starting from the town of Valdez and going north a distance of about 400 miles to Fairbanks. That includes a winter cut-off of some 45 or 50 miles that is indicated on this map. It is continued as a land trail to Fort Gibbon, one of the principal stations in the interior, and thence down the Yukon River and across what is known as the safety portage to Nome.

Another principal road joins the Copper River Railroad at Chitina and connects with this main road at Willow Creek.

The winter travel at the present time to the interior all passes over this road, which is the sole means of communication between the population of the interior and the outside world.

Beside this main trail there are a considerable number of relatively short roads in southeastern Alaska, one in particular starting from Fort Seward and going out to the Canadian boundary near Porcupine. We also have roads in the Seward Peninsula branching out from Fort Davis near Nome.

With the development of the Alaskan Railroad being constructed by the United States Government, the activities of the road commission have extended into that part of the country, and with the Alaska fund they have constructed and are constructing a considerable number of feeders to the railroad.

The appropriation asked for is \$422,000. Of that the principal item is for this main Fairbanks-Valdez trail.

At the present time a very radical reconstruction of the road near Valdez is necessary. It was washed out last year. It goes through the mountains and is not far from the glaciers. The streams flowing through those mountains are fed by the glaciers. It is one of the unfortunate characteristics of the glaciers of that country that there accumulates at certain times a lake of melted ice caused by the glacier which, when suddenly released causes an enormous flood. That flood covers the road, so that an entire relocation of that road is going to be necessary. That will cost \$60,000, and the remainder of the \$250,000 of the estimated cost for the main road is for repair work. We can maintain that road very much more cheaply by the use of road drags drawn by tractors than in any other way. But in order that we may use those tractors the road must be rebuilt for that particular variety of work. It has to be widened in places. Where there was a log road the side logs have to be taken off so that the scraper can move down the road. With the expenditure of this amount the president of the road commission estimates that he will be able to cut down the future cost of the maintenance of that road very materially, to a basis of about \$100,000 a year.

The CHAIRMAN. What is the population of Fairbanks at the present time?

Mr. RIGGS. Approximately 3,000 people.

The CHAIRMAN. This is practically the only way in which they can be reached from the seaboard?

Col. PILLSBURY. During the winter.

Mr. RIGGS. During the winter; they also use it a great deal during the summer because it is so much quicker than to go over the long, roundabout way by way of the river.

Mr. McKENZIE. Are there any people living along that road, in the interior?

Col. PILLSBURY. Starting from Valdez, the first settlements of any importance lie on the Tanana River, considerable mining towns. This is a mining region, all along the Tanana River. In this portion from here to here [indicating on map] I understand there is as yet very little settlement, but of that I am not so certain.

Mr. McKENZIE. How is it down the Yukon River from Fort Gibbons?

Col. PILLSBURY. There is there a considerable mining region which is reached by a tributary road from Ruby-Long-Creek. Of course, Alaska is a country of vast distances.

Mr. McKENZIE. Most of it is a barren waste, is it not?

Col. PILLSBURY. There is a good deal of it that has not yet been developed at all.

Mr. McKENZIE. What is the character of the timber around Fort Gibbons?

Col. PILLSBURY. Along the banks of the Yukon River there is some very fair timber. As one leaves the banks of the river and gets to the country back of it the timber becomes small and swamp dwarfed, except on the favorable side hills.

Mr. FIELDS. Is it pine, mostly?

Col. PILLSBURY. It is spruce.

Mr. McKENZIE. This question is not pertinent to this particular proposition, but I am anxious for the information, and you having been in Alaska a great deal can probably give it to me. Are our timber interests very valuable anywhere in Alaska?

Col. PILLSBURY. On the coast there are enormous possibilities of timber development. There is a high mountain range which runs straight down the Territory. On the south side of that range the temperature is very mild and the humidity is high, and there is an extremely heavy growth of timber, principally Alaska spruce, and they also have there cedar and hemlock.

The CHAIRMAN. The statement was made before the committee, I believe, that probably that spruce could help supply the shortage in the production of pulp.

Col. PILLSBURY. There is no doubt of that whatever.

The CHAIRMAN. If it could be reached.

Col. PILLSBURY. It can be easily reached.

Mr. FIELDS. Where is Anchorage on that map, Colonel?

Col. PILLSBURY. Anchorage is right there [indicating on map].

The CHAIRMAN. We are very much obliged to you, Colonel.

Col. PILLSBURY. I will leave this map of Alaska with the committee, Mr. Chairman.

The CHAIRMAN. Gov. Riggs, we will now take up the item for the Washington-Alaska military cable and telegraph system, which is on page 9 of the tentative draft of the bill. You received an appropriation for the fiscal year 1920 in the Army appropriation bill of \$140,000 for this item. You are asking for a similar amount in this bill, or at any rate the War Department has estimated for a similar amount in this bill. Have you any statement you desire to make to the committee in regard to this item?

Mr. Riggs. I think, Mr. Chairman, that I will have to defer principally to the members of the Signal Corps, who are present, so far as the details of this item are concerned.

But I wish to call your attention to the great need of some additional radio or cable stations in Alaska. I have, in making these requests to the Secretary of War, kept down to the lowest possible number the stations that I think are absolutely necessary for that Territory. I have included five. There are others which have been requested, but these five additional stations which I ask for are most necessary.

The telegraph system in Alaska is practically self-supporting. I believe it is entirely self-supporting, if the volume of Government business is taken into consideration.

Mr. GREENE. Has there been any marked betterment of conditions since the practicability of the wireless has become established? Does your business tend to increase, with the idea that it is no longer necessary to establish lines by the use of wire and poles, and the heavy outlay that that entails?

Mr. RIGGS. The wireless established by both the Washington-Alaska military cable and telegraph system and the naval communication service has been of great benefit to the Territory, and it has increased business a great deal. For instance, in 1915 the receipts for the telegraph system were \$293,144.68. In 1918 the receipts increased to \$570,198.64.

The CHAIRMAN. Almost double.

Mr. RIGGS. Almost double; and I think that is probably due almost entirely to the newly established radio stations.

Mr. GREENE. That means, probably, that in view of the fact that we have not got to have such initial cost for the establishment, that the prospective settlements can easily be linked together, and the thing is likely to grow to greater proportions.

Mr. RIGGS. I think so. We have now down on the boundary line between British Columbia and Alaska a town called Hyder. That is the scene of the great silver strike. In one mine, just beyond the boundary line, out of 400 tons of ore they got \$265,000 for the silver. That is probably going to be one of the phenomenal camps of North America. They greatly need a telegraph station there, and it is particularly desirable at that point because, being so near the boundary line, it will be very necessary to have such a station for the benefit of the customs officers and also for the benefit of the Department of Justice, in addition to which there will be a large amount of commercial business, which I should say would amount, in one year, to more than the cost of the radio installation.

Mr. GREENE. Does this seem to follow in Alaska, as is true very frequently in other instances, that, given such a prospect for easy communication as the wireless promises, there is a larger incentive to make distant settlements?

Mr. RIGGS. It has proven that way.

Mr. GREENE. Apart from the original objective, it tends to induce people to go because they do not feel that they will be cut off.

Mr. RIGGS. The biggest incentive we have is communication of some kind. Our mail service is very limited, and the people of Alaska are great users of the telegraph and wireless. It tends to build up business, because they can get in communication in that way which otherwise they would not be able to do.

The representative of the Signal Corps is here, Capt. Albro, and I would like to have him take up this item with you.

The CHAIRMAN. We will be very glad to hear Capt. Albro in regard to the radio stations.

Capt. ALBRO. Mr. Chairman, with regard to the item on page 9 for the Washington-Alaska Military Cable and Telegraph System, the matter which Gov. Riggs has just brought to your attention is entirely separate and distinct from that item, and our budget to cover that item was prepared before the proposal to have this station at Hyder and these other additional stations was brought to our attention. If the committee pleases, the Signal Corps wishes to defer the discussion of the \$140,000 item until the time when the Signal Corps appears in regard to its entire appropriation.

But at this time Col. Mauborgne, of the Engineering and Research Division of the Signal Corps, who is in charge of the radio work of the corps, will present the status of the radio stations in Alaska with relation to the proposition which Gov. Riggs has presented for your consideration.

The CHAIRMAN. We will be glad to hear the colonel. I would like to ask you, Captain, about this matter. If I recall correctly, a statement was made before the committee when we had the appropriation bill of last year before us that part of this money was intended to supply a submarine cable in place of some submarine cables which had become worn out.

Capt. ALBRO. Yes, sir; the chairman is absolutely correct about that, and the amount which was included in the \$140,000 for the purchase of cable was expended for that purpose. That was for an intermediate type of cable. In addition thereto we were forced, by conditions, to ask for a deficiency of \$95,000 for replacing a section of deep-sea cable, which threatens to go out any minute, and if that happens before we can replace it, they will not have any communication at all. This section lies in water 5 miles deep and we are preparing to replace it during the first favorable weather, as the communication will be discontinued, if that cable gives way.

The CHAIRMAN. Then Alaska would be shut off from the outside world?

Capt. ALBRO. Yes, Alaska would be shut off from the world.

The CHAIRMAN. Except for the telegraph lines up the Yukon and around into British territory?

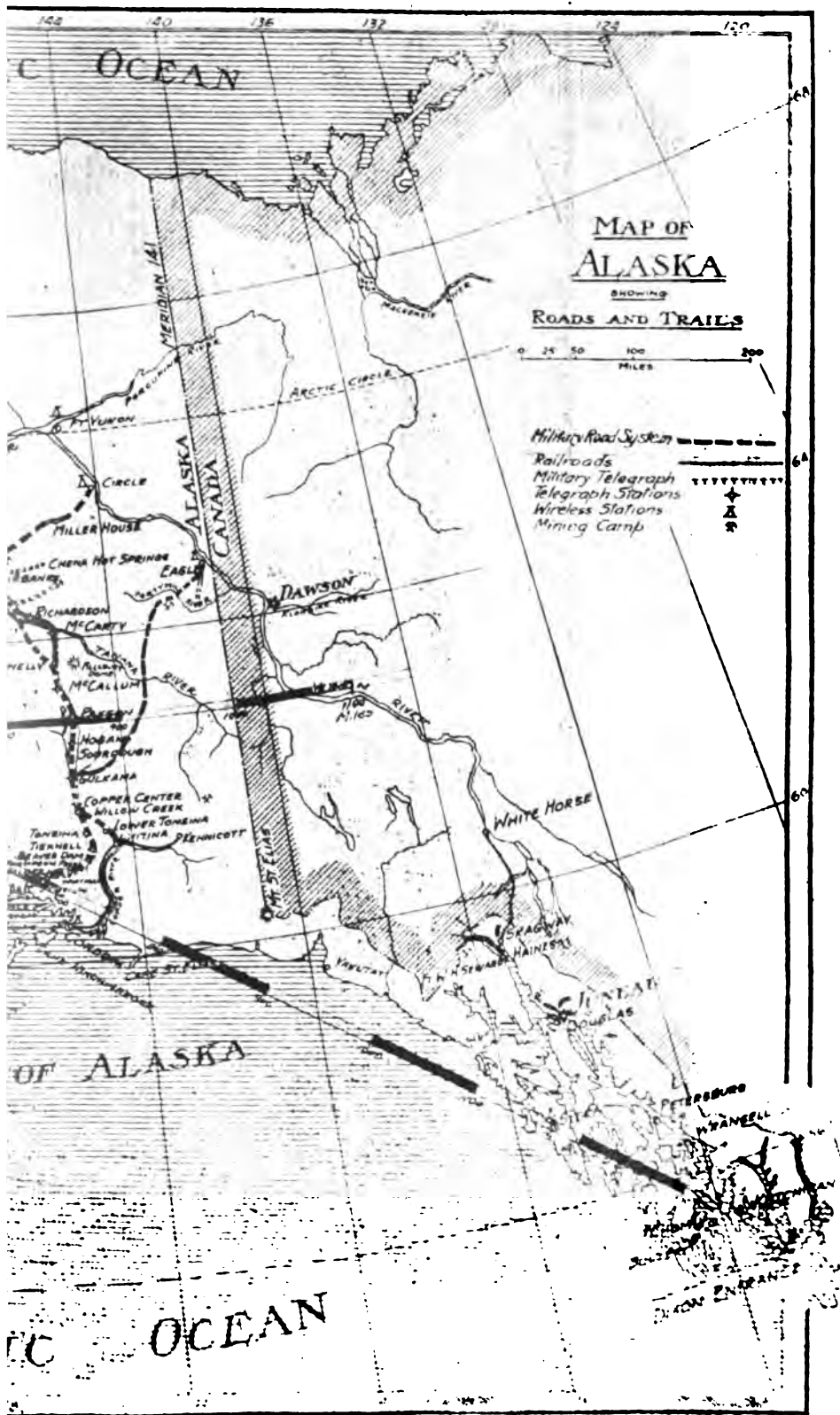
Capt. ALBRO. That would be the only way. It was in this connection that I called the committee's attention last year to the proposition to revamp the radio stations, so that if the cable did go out at any time we would have powerful enough wireless stations to communicate with our own country, and Col. Mauborgne will bring that to your attention now.

The CHAIRMAN. Colonel, will you state your full name and rank and your position in the Signal Corps?

Col. MAUBORGNE. Lieut. Col. J. O. Mauborgne; in charge of the Engineering and Research Division of the Signal Corps.

Mr. Chairman, in direct connection with the proposal which the Governor of Alaska made in a letter dated March 13, 1920, addressed to the Secretary of War, of which I believe the chairman has a copy, or at least a letter on the same subject, there is proposed for various reasons the erection of five radio stations—one at Hyder, situated on the international boundary at the head of the Portland Canal; one at Bethel, a town of three or four hundred inhabitants, at the





head of navigation on the Kuskokwim River; another at Seldovia, a town of several hundred people on Cook Inlet, another at Bettles, on the upper Koyukuk River, in the center of a prosperous although small mining community of about 400 people; and another at Nushagak, at the head of Bristol Bay, which is the headquarters for extensive fishing operations during the summer. I am not familiar with whether or not the committee has had presented to it the reasons for the establishment of those stations.

The CHAIRMAN. No; I do not recall that the reasons have been stated to the committee.

Col. MAUBORGNE. Then I had better present the reasons given in the communication from the governor of Alaska to the Secretary of War, and I request the permission of the committee to introduce those reasons.

The CHAIRMAN. You may proceed.

Col. MAUBORGNE. The governor, in his letter to the Secretary of War, says:

At present there are five proposed stations of great importance to be considered: Hyder is situated on the international boundary at the head of Portland Canal. It is the port of the new silver discoveries located on both sides of the international boundary line. There is existing mail service of only once a week, but this will undoubtedly be increased during the coming summer. The present population is about 400 people. As soon as snow leaves the ground in the spring the number of men employed in and around Hyder will be at least 3,000.

The CHAIRMAN. Are these men mostly miners?

Col. MAUBORGNE. I think we will have to refer to the governor for that information.

Mr. RIGGS. They will be miners and prospectors, and the population that follows a mining district.

Col. MAUBORGNE. The governor continues:

Should either an extension of the military cable be made to Hyder or a radio plant be installed, I am confident that Hyder would be one of the most important offices in all of Alaska. It will serve not only the commercial needs of a rapidly growing community but will be most necessary to the Government, due to the close proximity of the town to the international boundary. If in interest of economy no great program of telegraphic betterment can be inaugurated, I earnestly urge that at least every endeavor be made to place Hyder in telegraphic communication.

It might be a good plan to refer to the Signal Corps map of Alaska at this time to give you some idea of the Signal Corps lines in Alaska. The Signal Corps, as you perhaps know, operates a cable from Seattle to Sitka. The line then goes on to Valdez, where the relay of messages takes place. A branch of the cable runs from Sitka around through here [indicating on map], and ties up this very important district in southern Alaska [indicating the southeastern end of Alaska], and in that district there is handled perhaps one-third of the telegraphic business of Alaska. It comes from that section in there [indicating on map].

That cable, as you see from this map, runs through Petersburg and Wrangell and Kotlik and comes down to a place called Ketchikan. Hyder is over here on the border [indicating on map].

The governor's proposition is either to connect Hyder by radio to some station on this system—and he has suggested the Navy station at Ketchikan, although the War Department can not see why it should not be one of the War Department stations, preferably Wrangell, which is the same distance away, or to run a cable around

through this inland route, through the Portland Canal up to Hyder. The most satisfactory engineering solution of the problem would be to put a radio station at Hyder.

There now arises the important question, will the station pay? After all, that is the important thing, and the question of the population and the number of messages to be handled daily is a matter to be considered carefully.

The CHAIRMAN. About how much would the radio station at Hyder cost?

Col. MAUBORGNE. \$30,000. With suitable towers and modern equipment, a 3½-kilowatt station would be the right thing to put in there. That is an outside figure. It is possible we could do it for less, but we put the figure at \$30,000. That is due to the difficulty of transportation and the high rates we have had to pay in the past in order to get the stuff up there. It might ultimately be cut down to \$23,000, exercising every precaution of economy, but we place the figure at \$30,000 as an outside amount.

Mr. FIELDS. What is the cost of transmission by radio as compared with cable?

Col. MAUBORGNE. I am not prepared to state that. I believe the rates would be less by radio than by cable, as the upkeep will be less.

Mr. GREENE. Is there not already in the working of the radio such a tendency to change the original installation by so-called improvement from time to time that the average per year of maintenance equals that of the old wire lines for transmission?

Col. MAUBORGNE. I should not say that our changes in Alaska in radio would warrant such a statement, compared to the amount of money expended for the upkeep of the Alaska telegraph wires, because the Congress has never seen fit to change the radio installations in Alaska or allow us anything to install any new apparatus in the stations in Alaska to take care of changes in the art which we know about.

Mr. GREENE. I am not undertaking to disclose either what you know about radio or what we are trying to conceal, but you were speaking of the installation of a modern station.

Col. MAUBORGNE. The very last word; yes, sir.

Mr. GREENE. Having experience with similar installations in this country, once a modern station is installed and the ideal of keeping it constantly modern, equally permanently installed, there seems to be a considerable expense over the original estimate after the thing has been in operation five or six years. I am not saying this in any satirical way, because we all want improvement; but the question is whether or not at the outset we are likely to anticipate reasonably what it ultimately will cost us.

Col. MAUBORGNE. I think I am safe in saying that, all things considered, the upkeep on the cable operation and everything else, versus the upkeep, installation, and so forth, of the radio stations, it will be less expensive to install and maintain the radio station rather than the cable, in the long run. The difficulty of the whole Alaskan system is in the keeping up of those telegraph and cable lines. Our troubles have been due to the fact that the weather is such that the lines will go down, and you can not fix them up, and hence you must parallel all your wire lines by radio lines. Here is the cable and the telegraph lines [indicating on map], starting from here [indicating on

map], it goes through Fairbanks and down the Yukon River and then it ties in a lot of outside districts like those embracing Fort Yukon, Circle, Fort Egbert, and the recently acquired stations at Iditarod, a station at Nome, a station at Holy Cross. The places on the outside that are not tied in by these telegraph lines are connected by radio to certain large radio centers, and from there their messages are sent over the telegraph lines. When the telegraph line goes out of commission, the radio has to bear the whole strain, and messages are delayed for days because of inadequate equipment and for other reasons. If we did not have radio there are times when we could not get any messages through.

The CHAIRMAN. Do storms or heavy snowfalls cause the wires to fall down?

Col. MAUBORGNE. Sleet on the wires causes a great deal of trouble. Heavy sleet on the wires carries down everything.

The CHAIRMAN. Do you have considerable loss every year?

Col. MAUBORGNE. Every single year the upkeep is enormous. The difficulty of getting men out to repair those lines and the installation of new wires or the repair of old ones is in itself a tremendous problem.

The CHAIRMAN. Does the damage occur largely during the winter months?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. Do you have any damage during the summer months by reason of storms?

Col. MAUBORGNE. I do not think our records show that the summer months bring us very much loss on that account. Perhaps Gov. Riggs can tell you something of the difficulties.

Mr. RIGGS. At times the wires go down because of forest fires, and also because of storms. There is ordinarily not so much damage in the summer as there is in the winter.

The CHAIRMAN. Do you attach your wires to the trees, or do you put up poles?

Col. MAUBORGNE. I think it is a little of both. You utilize the existing facilities where you can.

Mr. GREENE. What is the approximate range of such a station as you would put up at Hyder?

Col. MAUBORGNE. A three and one-half kilowatt set of the type we propose, which is the last word, will give you a daylight range of 500 miles by telegraph.

Mr. GREENE. Of course, this is such a technical subject to most laymen that the actual terms employed may sound ridiculous. Would it be the idea, if you link up Alaska by radio communication, that perhaps stations about 500 miles apart would be the practical way of doing it?

Col. MAUBORGNE. We have a proposition of that sort in our files from the officer in charge of the Alaska military telegraph and cable system. He proposes to gradually get rid of the wire lines and depend on radio for connecting all intermediate points along rivers, but the War Department realizes the amount of money necessary for that purpose, and we have not made such a proposition.

The CHAIRMAN. It would require a mast at every community.

Col. MAUBORGNE. It would require a mast at every community; yes, sir.

The CHAIRMAN. And you would have to transport the metal used in the construction of the masts?

Col. MAUBORGNE. All from the United States, and probably from the eastern part of the United States.

The CHAIRMAN. So that the transportation alone would be very expensive.

Col. MAUBORGNE. It is a large item. For example, in our estimate for transportation of a 5-kilowatt station—in order to install a 5-kilowatt station at any point we figure the freight charges on the equipment would cost in the neighborhood of \$5,000 or \$6,000. That is a considerable item in itself.

The CHAIRMAN. It is 20 per cent of the \$30,000 for the station?

Col. MAUBORGNE. That is the answer. Now, to go to the other stations proposed. I will say at this point that the Chief Signal Officer believes that this station if put in will justify the expense—that is, that the number of people at that point will give a sufficient flow of business so that it will be a paying proposition.

Now, Mr. Chairman, to revert to the letter of the governor of Alaska to the Secretary of War on the other propositions, he refers to Bethel. He says that "Bethel is a town of some 300 or 400 people, at the head of navigation on the Kuskokwim River. This district is one of the most inaccessible in Alaska. It is served by small commercial craft two or three times during the ice-free season of navigation. There is a large Indian population close to Bethel, and a growing reindeer industry. During the epidemic of influenza, which ravaged Alaska, it was only at great expense that I was able to render any assistance to this district or give instructions as to the method of handling the disease. A radio station is greatly needed at Bethel, not only for commercial reasons, but also to assist in the maintenance of law, order, and health."

The CHAIRMAN. What are the commercial opportunities at Bethel?

Col. MAUBORGNE. I will have to refer to the governor for that.

Mr. RIGGS. It is a fishing center. That will be the principal use of it.

The CHAIRMAN. Salmon fisheries?

Mr. RIGGS. Salmon fisheries; yes, sir.

Col. MAUBORGNE. That town is about 150 or 200 miles from the nearest radio station. We could scarcely get along with less power than at the station proposed down here at Hyder.

Mr. GREENE. Right there, Colonel, if you are going to make any installations at all and transport anything from the United States to Alaska for this purpose, would it not seem to be pretty short-sighted to get restricted sets now? Why not go the whole hog or none at the very start.

Col. MAUBORGNE. That is what we are doing here. If we put in a three and one-half kilowatt set to work 150 miles we have a very satisfactory set. It can be used to handle the business through the worst static conditions which we expect to find in Alaska. Electrical storms are very severe in the summer time and at certain times during the winter. \$30,000 would be the cost of a suitable station for Bettles.

Then the governor asks for another station at Seldovia. He says in his letter to the Secretary of War:

Seldovia is a town of several hundred people on Cook Inlet. It is served only by the occasional commercial steamers. It is the center of a large fishing industry and has also some near by mines, which will in all probability be operated this coming season. The need for a station here is very evident.

Bettles is another town for which the governor asks a radio station. That is an extremely isolated town very far from the telegraph lines.

The governor says in his letter to the Secretary:

Bettles is on the upper Koyukuk River and is the center of a prosperous, though small mining community of about 400 people. A river steamer visits the settlements along the river twice during the season of open navigation. There is no other way of communicating with this part of the country except by a very slow and irregular mail service. The communication with Bettles is badly needed, not only considering the mining population, but also in the interest of the preservation of law. We have had a number of very serious murders on the Koyukuk and a great many accidents on the river resulting in the loss of life. The people of this region are deserving of consideration.

That does look like a place which needs help. The Governor also asks for a station at Nushagak. In his letter to the Secretary he says:

Nushagak is at the head of Bristol Bay, and is the headquarters for extensive fishing operations during the summer. The Bureau of Education maintains a school here and an orphanage where the little survivors of the epidemic, which carried off practically all the adult native population, are cared for. A commercial wireless is maintained at Nushagak in the summer months. With the last sailings of the fishing fleet the station is dismantled and the equipment restored to the steamer from which it had been taken. There should be permanent communication with this isolated district.

Those stations will cost you in the neighborhood of about \$20,000 where they are close together like that.

The War Department is not convinced that the amount of business at those stations, except at Hyder, will pay for the service. Of course there is a lot to be thought of besides a self-sustaining service, when you consider the human lives at stake and other things, which we respectfully refer to the consideration of the committee.

The CHAIRMAN. I understand that in this item of \$140,000 none of these matters is involved?

Col. MAUBORGNE. Not any, sir. I would like to say one word about that particular item. We presented to the committee in the original draft, I believe, an estimate for this, and we have been trying for three years to get into the annual appropriation bill an item for the revamping of these Alaskan radio stations, so that we can put in modern apparatus which will give better service. The situation is such that I could spend hours telling you how bad a fix we are in in regard to different things at these various places. The situation is very bad, and I feel that I really can not do justice to the subject in the short time I have. I should like to get the permission of the committee some time to give us a hearing as to the whys and wherefores of a plan which we propose which will cost \$750,000, to be appropriated preferably in three equal annual instalments, involving the revamping of all the stations in Alaska by putting in modern apparatus, such as the Navy has to-day in all its land stations, and the Army has not.

The CHAIRMAN. How many stations has the Navy in Alaska?

Col. MAUBORGNE. There are nine listed. They are as follows: Cape St. Elias, Cordova, Jualin, Juneau, Ketchikan, Kodiak, St. Paul, Seward, Sitka.

Mr. GREENE. I just learned from your answer that not only is the Army maintaining wireless and other means of communication in Alaska, but that the Navy is, too; I presume both being used for commercial and official purposes?

Col. MAUBORGNE. Yes, sir. The Navy stations are naturally on the coast. They are all on the coast. They have nothing inland.

Mr. GREENE. What is the philosophy of government of the kind that divides up among various arms of its service, the facilities for accomplishing one service, that is, communication for business purposes?

Col. MAUBORGNE. I would not attempt to defend such a proposition. The Alaska radio stations were all in there before the Navy ever came on the ground.

Mr. GREENE. I do not care who handles it, but I am referring to the idea of five or six people handling a matter designed for ordinary peace-time purposes.

Col. MAUBORGNE. Another thing I may say is this: Here is the situation. We have the interior of Alaska here covered with telegraph lines [indicating on map], and the radio stations are so placed that they will duplicate these telegraph lines, but we fail to carry out that idea when we come to connect Fairbanks with Valdez. The radio does not work between those points.

Mr. FIELDS. The distance is too great?

Col. MAUBORGNE. The distance is too great and the apparatus originally installed was not put in there for the purpose of making that jump, and it naturally fails. Then they attempt to transmit to the Navy at Cordova. The Navy station can sometimes reach us, but we have sometimes great difficulty in reaching them.

Mr. FIELDS. What is the distance?

Col. MAUBORGNE. About 250 miles in an air line.

The CHAIRMAN. Does the Navy cooperate with the Coast Guard Service?

Col. MAUBORGNE. I believe so. They are supposed to handle Army business; but through our arrangements we have with them for routing messages, they handle first official business and then they handle commercial business directed to the Navy and they handle Army official messages, and finally you get to the commercial messages of the inhabitants of Alaska, and if it so happens that the cable breaks down and if the Navy has to handle these messages the delay is sometimes as much as a couple of weeks.

The CHAIRMAN. I imagine the revenue cutters in Alaskan waters carry radio apparatus, and they are in communication with the naval stations?

Col. MAUBORGNE. Yes, sir; that service is essential.

The CHAIRMAN. We are very much obliged to you.

RELIEF OF DISBURSING OFFICERS.

Gen. LORD. Mr. Chairman, I would like at this time to submit to the committee, if it is agreeable, the enabling act, which was sent to the chairman of the Committee on Military Affairs of the House of Representatives under date of March 4, 1920, from the Secretary of War.

The Navy Department last year secured an enabling act for the purpose of relieving disbursing officers of the amounts suspended against them by the accounting officers of the Treasury.

The legislation recommended by the Secretary of War provides that such disbursing officers shall be relieved of the amounts suspended against their accounts, where the loss or deficiency of funds occurred while such disbursing officer or special disbursing agent was operating in line of duty and the expenditure made was without fault or negligence on his part.

This draft of the enabling act has been submitted to the Judge Advocate General of the Army and approved by him as to form. It has always been customary at the close of a war to ask for such legislation, and it has always heretofore been granted. The record at the present time shows that there has been suspended against the account of disbursing officers something more than \$1,000,000,000 by the accounting officials of the Treasury. Something more than half a billion of this has been removed and the greater portion of the balance will probably also be removed by the accounting officers of the Treasury Department. In the office of the Director of Finance we have an activity that receives these statements of differences from the office of the auditor and then proceeds to investigate and supply what may be needed to support the expenditure—some missing paper or an affidavit or a statement from the record, or something of that sort—that will satisfy the accounting officers and clear the account.

The CHAIRMAN. This would be in the nature of legislation on an appropriation bill, and of course is subject to a point of order. But if it were to be inserted by the committee the proper place for it would be at the end of the bill?

Gen. LORD. Yes. It has always heretofore, if I recall correctly, been made a part of an appropriation act. I think the Navy's legislation was secured in that way. But I wish at this time to call it to the attention of the committee because it is urgently needed to clear these accounts.

The disbursing officers, who have gone back into civil life, have these suspensions hanging over them. We are busy with the accounts, supplying necessary papers, and we have given them to understand it is not necessary for them to come here to Washington and waste their time in trying to settle their accounts. We are handling the work for them. If we wish any statement from them, affidavits or papers, we write to them and tell them what to do. The greater part of the total suspended we will probably be able to clear up in my office. They are largely pro forma suspensions.

The CHAIRMAN. It would be very wise, in my opinion, to get the figures quite fully in connection with this matter because if the committee should desire to include it in the bill it would be asked a great many questions on the floor about it.

Gen. LORD. It is not possible to do it. We can get you the exact figures to date; but there is a mass of accounts still in the hands of the auditor which we have not yet received.

The CHAIRMAN. These amounts are charged against emergency officers—

Gen. LORD (interposing). Against all disbursing officers.

The CHAIRMAN. Those in the Regular Army and those who officiated temporarily during the emergency.

Gen. LORD. Yes, sir.

The CHAIRMAN. Have you any idea how much the amount was that was written off in this way in the Spanish-American War, in the Civil War, and in the other wars; and also can you give us the date of the bills that carried a similar item for the relief of disbursing officers in those wars?

Gen. LORD. I can give it to you for the Spanish-American War. As to the exact amount written off, that would be a matter of record in the auditor's office. We will ascertain whether that can be furnished.

Mr. McKENZIE. In checking up these various disbursing officers, have you found that any of them were really liable to the Government, and if so have you made any recoveries from any of them?

Gen. LORD. Yes, indeed.

Mr. McKENZIE. That being true, do you not believe it would be a pretty difficult matter to get through any legislation that might even create a doubt in the mind of the membership of the House that by such legislation we might be liable to relieve some man who was really obligated to the Government?

Gen. LORD. Under the provisions of law and regulations the Government would be fully protected. There are many honest disbursements which have been suspended against disbursing officers, that is, honest disbursements were made which, through loss of vouchers from overseas, or loss of vouchers in the field of operations a man can not furnish the necessary papers to cover the disbursement. The matter will be very carefully sifted. If we find that any of these people are liable and we can collect, we collect. In many of the cases the man is out of the service and we can not recover, even if we find he is liable. It is up to the Secretary of War to decide in what cases this relief will be applied.

The CHAIRMAN. Were a good many vouchers lost by reason of a shell hitting a wagon carrying the papers of an organization?

Gen. LORD. I do not know of a specific case as to a disbursing officer's accounts, but there were many papers such as allotment papers and service records that were destroyed. In one particular instance the records of an organization were destroyed.

Mr. McKENZIE. In any case where there was a reasonable doubt raised in the minds of the War Department officials that the man probably was not culpable, you would not begin any action against a man under those circumstances? The only man, the only disbursing officer, who would be in any danger would be the man, an examination of whose accounts would furnish evidence of guilt against him, and therefore while these men no doubt would like to be discharged, free of any obligation, I question very seriously whether we could get by with any legislation that might look as though it was all right, when we would understand it was not for the purpose of relieving a man who was really liable.

Gen. LORD. It would not be for the purpose of relieving any man who was really culpable. It may provide relief for a man who was really liable, but who, because of the extraordinary conditions under which he was disbursing, is entitled to consideration, and this would enable the Secretary of War to give him that consideration. Their accounts must be justified.

Mr. FIELDS. He may be legally responsible, but morally innocent.

Gen. LORD. He may be morally innocent and unable to make good.

The CHAIRMAN. In that connection, for quite a while you refused to give discharges to disbursing officers and to hold them in the Army because their accounts could not be verified and checked up so as to give a discharge in full. You are not holding back anybody now?

Gen. LORD. No; and I believe that the cases where officers were held in service were generally restricted to those where there was evidence of culpability which required investigation.

The CHAIRMAN. I know there was a good deal of complaint on the part of emergency officers after the war was over, because they could not get their discharges and go back to their business because of the inability to furnish the necessary vouchers.

Gen. LORD. Yes; but I think the complaints generally had reference to failure to obtain a settlement of their final accounts rather than discharge, as during the period of demobilization officers having accountability for public funds or public property were not paid their final pay at date of discharge. This situation was later met by effecting final settlement with all bonded accountable officers.

Mr. MCKENZIE. Is it held that the discharge of an officer from the military service carries with it a relief from liability under his bond?

Gen. LORD. No; if he has money or if he has a sufficient bond we can recover.

Mr. DENT. Did I understand you to say that a law had already been passed for the Navy in connection with this same sort of thing?

Gen. LORD. Yes. The Navy sometime last year succeeded in getting its enabling act.

The CHAIRMAN. As compared to the disbursing officers of the Army, how many disbursing officers are there in the Navy?

Gen. LORD. I do not know. I have no information about that.

The CHAIRMAN. They are not anywhere as near numerous as the disbursing officers of the Army?

Gen. LORD. They should not be, because the Navy is not scattered. It is located either in a navy yard or on a ship, while the Army units are widely scattered.

The CHAIRMAN. Will you kindly put into the hearing the date of the passage of the act which relates to the disbursing officers of the Navy in this war?

Gen. LORD. The enactment is simply one paragraph. It is brief, and if you would like it, I will introduce the Navy act itself.

1. The act of March 2, 1903 (32 Stat., 955-956), reads as follows:

"That the proper accounting officers of the Treasury be, and they are hereby, directed, in the settlement of the accounts of disbursing officers of the War Department, arising between the 21st day of April, 1898, from which date war with Spain is declared to have existed, and the 8th day of July, 1901, inclusive, the date on which the last organization of the Volunteer Army was mustered out of the service of the United States, to allow such credits for payments and for losses of funds, vouchers, and property as may be recommended under authority of the Secretary of War by the heads of the military bureaus to which such accounts respectively pertain.

"Sec. 2. That the accounts of military officers, whether of the line or staff, for Government property charged to them, shall be closed by the proper accounting officers whenever, in the judgment of the Secretary of War, it will be for the interest of the United States to do so: *Provided*, That such accounts originated subsequent to April 21, 1898, and prior to the 9th day of July, 1901: *Provided further*, That no settlement shall be made by the officers of the Treasury, under this Act, of the accounts of any officer whose combined responsibility for public money and Government property shall exceed the sum of \$5,000, and only of such officers of the Army in whose accounts there is no apparent fraud against the United States: *And provided further*, That this act shall remain in force for two years from and after its passage, and no longer."

2. The naval appropriation act, approved July 11, 1919 (Public No. 8), contains the following provisions on pages 2 and 25, respectively:

"The accounting officers of the Treasury shall relieve any disbursing officer of the Navy charged with responsibility on account of loss or deficiency while in the line of his duty, of Government funds, vouchers, records, or papers, in his charge, where such loss or deficiency occurred without fault or negligence on the part of said officer: *Provided*, That the Secretary of the Navy shall have determined that the officer was in the line of his duty, and the loss or deficiency occurred without fault or negligence on his part: *Provided further*, That the determination by the Secretary of the Navy of the aforesaid questions shall be conclusive upon the accounting officers of the Treasury: *Provided further*, That all cases of relief granted under this authority during any fiscal year shall be reported in detail to the Congress by the Secretary of the Navy.

"That the accounting officers of the Treasury Department are hereby authorized and directed to allow, in the settlement of the accounts of disbursing officers of the Navy and Marine Corps covering the period of the present emergency, such credits for payments to officers and enlisted men not ordinarily allowable under the statutes, as are certified to them by the Secretary of the Navy as having been incurred under military necessity, or as having been occasioned by accidental circumstances or conditions over which such disbursing officers had no control and for which they were not justly responsible: *Provided*, That the period of the present emergency as contemplated by this paragraph shall be regarded as beginning on the 6th day of April, 1917, and as terminating six months after the expiration of the quarter in which peace is declared. And that nothing herein shall be construed to include payments under contracts for supplies or services."

STATEMENT OF MAJ. GEN. P. C. HARRIS, THE ADJUTANT GENERAL.

The CHAIRMAN. Gen. Harris, will you kindly explain the item on page 5 relating to The Adjutant General's Department? I notice that you have estimated for \$9,000 this year, as against \$12,000 appropriated last year.

Gen. HARRIS. Yes, sir. We actually expended from the appropriation of last year, to March 20, \$9,825, leaving a balance to-day of \$2,175, which will be ample to carry us through this fiscal year. The prewar appropriation for this item was \$7,500. We are increasing it \$1,500. This increase is not in proportion to the increase in the strength of the Army, but we feel it will be sufficient for the needs for the fiscal year.

The CHAIRMAN. Is there anything further that you desire to explain regarding the item?

Gen. HARRIS. Not unless the committee desires.

Mr. DENT. Have you the figures now up to date as to the present strength of the Army?

Gen. HARRIS. I can give it to you; yes.

Mr. DENT. Officers and enlisted men? I would like to have that in the record.

The CHAIRMAN. Probably in the hearings, General, you can insert the figures to the end of this week.

Gen. HARRIS. I have them to March 15, if that is satisfactory.

The CHAIRMAN. You could give them to March 23, I assume, in the hearing by the time the transcript comes to you?

Gen. HARRIS. To March 16, there were 17,512 officers, and 221,711 enlisted men. I will insert the latest figures in the record.

Mr. DENT. Can you insert in the statement without much trouble—of course I know you have had it—how many of those men are one-year enlistments, and how many are three-year enlistments?

Gen. HARRIS. I can very readily show that. The strength of the Army on March 23, 1920, included 17,365 officers and 218,823 enlisted men, a total of 236,193. The enlisted strength of the "New Army,"

composed of men who have been enlisted since February 28, 1918, when recruiting was resumed, was 179,623, of whom 91,946 were enlisted for one year and 87,677 for three years. The balance of the men were enlisted prior to August, 1918, for a period of three or four years in active service and four or three years with the reserve.

Mr. DENT. One other thing I would like to have in the record is how many of the 32 National Guard camps and cantonments are actually used by the Army now for military purposes, not for storage purposes, those where they have forces. I might suggest you could insert that in the record.

Gen. HARRIS. I will insert that in the record; yes, sir.

Mr. DENT. And the number of each one of these posts and cantonments or camps that were established during the war?

Gen. HARRIS. Yes, sir.

The CHAIRMAN. That includes both the National Guard and the National Army?

Mr. DENT. Yes; both the National Guard and the National Army.

Gen. HARRIS. You mean the strength to-day?

The CHAIRMAN. Yes.

Gen. HARRIS. The present status of the 32 original National Guard and National Army cantonments and the present military strength at each are as follows:

National guard.

Camp.	Officers.	Enlisted men.	Date discontinued.	Remarks.
Camp Bowie, Tex.....	4	4	Sept. 1, 1919	Buildings sold; salvage detail on duty.
Camp Hancock, Ga.....	1	(¹)	Mar. 27, 1919	Do.
Camp Beauregard, La.....	(¹)	(¹)	Mar. 20, 1919	Buildings sold.
Camp Kearney, Calif.....	62	685		
Camp Cody, N. Mex.....	(¹)	(¹)	June 25, 1919	Do.
Camp Fremont, Calif.....	(¹)	(¹)	June 30, 1919	Do.
Camp McArthur, Tex.....	(¹)	(¹)	Mar. 7, 1919	Do.
Camp McClellan, Ala.....	7	47	Mar. —, 1919	Buildings sold; salvage detail on duty.
Camp Sheridan, Ala.....	(¹)	(¹)	Mar. 15, 1919	Buildings sold.
Camp Shelby, Miss.....	(¹)	(¹)	Oct. 15, 1919	Do.
Camp Sevier, S. C.....	(¹)	(¹)	Apr. 9, 1919	Do.
Camp Wadsworth, S. C.....	2	1	Mar. 29, 1919	Do.
Camp Wheeler, Ga.....	5	(¹)	Apr. 10, 1919	Do.
Camp Logan, Tex.....	2	(¹)	Mar. 20, 1919	Do.
Camp Doniphan, Okla.....	(¹)	(¹)	May 10, 1918	Consolidated with Fort Sill.
Camp Greene, N. C.....	(¹)	(¹)	June 30, 1919	Buildings sold.

¹ None.

National Army.

Camp.	Officers.	Enlisted men.
Camp Devens, Mass.....	101	2,266
Camp Upton, N. Y.....	102	3,040
Camp Dix, N. J.....	173	4,913
Camp Meade, Md.....	244	3,597
Camp Lee, Va.....	96	1,417
Camp Grant, Ill.....	381	6,042
Camp Sherman, Ohio.....	97	1,447
Camp Taylor, Ky.....	506	6,516
Camp Pike, Ark.....	362	3,459
Camp Gordon, Ga.....	248	2,909
Camp Lewis, Wash.....	168	2,237
Camp Funston, Kans.....	320	3,222
Camp Jackson, S. C.....	163	3,130
Camp Dodge, Iowa.....	290	2,185
Camp Travis, Tex.....	254	2,936
Camp Custer, Mich.....	93	1,012

The CHAIRMAN. Is there any other item, General, that you desire to discuss?

Gen. HARRIS. There is one other item, if the committee can give me a hearing. It is not included in the estimates of the Secretary of War. It is a request for a reappropriation of the unexpended balance on June 30. At the time the Secretary of War prepared his estimate it was hoped that we would be able to complete the statement of services for the adjutants general of the States, and also complete the work connected with the draft records, for which a special appropriation of \$3,500,000 was made in the Army appropriation bill last year. I have a letter here from the Secretary which I would like to read.

The CHAIRMAN. Very well.

Gen. HARRIS (reading):

WAR DEPARTMENT, *Washington, March 26, 1920.*

MY DEAR MR. KAHN: I beg leave to invite your attention to a matter that I believe should be considered in connection with the pending Army appropriation bill. I refer to the appropriation of \$3,500,000 for the purpose of caring for the draft records and the furnishing of statements of service to the adjutants general of States.

I respectfully request that the unexpended balance of that appropriation be made available for the fiscal year ending June 30, 1921, as otherwise it will be impossible to complete the statements of service for the adjutants general of the States, or to conduct satisfactorily the work connected with the draft records.

The Adjutant General will, if you so desire, appear before your committee and explain in detail his needs in this connection.

Trusting that you will give this matter your favorable consideration and that The Adjutant General will be permitted to appear before your committee, when he will furnish you with the details you may desire, I am

Cordially, yours,

NEWTON D. BAKER, *Secretary of War.*

Hon. JULIUS KAHN,

Chairman Committee on Military Affairs.

House of Representatives.

The CHAIRMAN. I gather from the Secretary's letter that he desires to write language into the bill to continue that unexpended balance?

Gen. HARRIS. That is true.

The CHAIRMAN. Have you formulated the language that he desires?

Gen. HARRIS. I think, if there is no objection, I will insert that in the hearing, if that will be sufficient.

The CHAIRMAN. If you will kindly do so.

Gen. HARRIS. I have a provision that I formulated some time ago that does not exactly fit the present needs.

Mr. McKENZIE. General, of course, in your office you had at the time of the armistice and demobilization of our Army a record of every man who had been inducted into the service?

Gen. HARRIS. Yes, sir.

Mr. McKENZIE. Or was mustered in?

Gen. HARRIS. Yes, sir.

Mr. McKENZIE. And you would have been able to compile a report for the benefit of the adjutants general of the various States of all the men who were really in service, from your records, is that true?

Gen. HARRIS. Yes, sir; I am now engaged upon that work.

Mr. McKENZIE. Now, on this matter of the draft records, if I am correctly informed the question was put up to Gen. Crowder as to what disposition should be made of those records, and he submitted proposition that they could do one of three things: First, they

could leave them in the hands of the county boards or officials; second, they could send them to the adjutants general of the respective States; or, third, they could be assembled in Washington. As a matter of fact, of course, the orders went out to assemble them here in Washington and have them all shipped to Washington. Do you know who was responsible for the issuance of that order?

Gen. HARRIS. Of course the Secretary of War was responsible. I probably should share the responsibility. I recommended it, among other things.

Mr. McKENZIE. Now, a question arises. How many clerks have you employed generally in handling those draft records?

Gen. HARRIS. Well, I have handling the draft records alone probably an average of 500 clerks.

Mr. McKENZIE. Five hundred?

Gen. HARRIS. So far.

Mr. McKENZIE. From the time they were shipped here?

Gen. HARRIS. Not from the time they were shipped here; during this fiscal year. I had practically no money during the last fiscal year.

Mr. McKENZIE. Now, General, what, in your judgment, is the practical value to this country of those draft records and questionnaires?

Gen. HARRIS. Those records have been of the greatest assistance to The Adjutant General's Office during the year in supplementing the records of the office proper. While it is true that I am supposed to have, and with few exceptions I have, complete records of all the drafted men, it is a fact that in some cases all of the records did not reach me. Men were inducted into the service and went to the camps as well. Yet in the camps some were afterwards rejected and sent back to their homes, and some of the records of those men did not reach The Adjutant General's Office through the regular channels, and I have been compelled to fall back upon the draft records to give me practically everything I know about those few men.

Mr. McKENZIE. As a matter of fact, of course, you have a record of every man who was really mustered into the service? That comes to your office?

Gen. HARRIS. Unfortunately, there were some cases where they did not send the record in.

Mr. McKENZIE. In case a question would arise about any man's record, whose name might appear on your roll down there as having been mustered into the service, and you wanted to verify any fact in connection with the matter, you could have done it very easily by taking it up with the county draft board, of the adjutant general of the State, could you not?

Gen. HARRIS. Yes, sir.

Mr. McKENZIE. From which this soldier came?

Gen. HARRIS. That is true, if the records had been set up there, but assuming that they were left with the local boards, there were nearly 5,000 local boards, and even with one clerk for each local board, the local boards would have nearly 5,000 clerks, as against 500 here. If they had gone to the States, there would have been at least 48 separate States with clerks engaged upon those records, and they would have had to do what my clerks have been doing here.

These 500 clerks have not been engaged in administration solely, but they are setting up and completing the records that were sent

in. I would not criticize the draft boards, because they accomplished a great deal, and it is really remarkable how nearly complete and accurate the records were, but it is, nevertheless, a fact that I have been compelled to go over every questionnaire and check it up, and every registration card and verify that with the duplicate so as to straighten those records out and make them accessible. These clerks have been very largely engaged in arranging and completing and perfecting the records.

For instance, there is supposed to be with each local board record a duplicate set of registration cards. One of the States, in fact, several have asked for these duplicates, and in some cases we have loaned those records to them for State purposes. Before letting them go out I took the precaution to compare the duplicate with the original. I find there would be a great many registration cards in the duplicates that are not in the original set, and vice versa, and I have been compelled to go through and complete those. That work alone has engaged the service of a large number of clerks. It is absolutely necessary that that be done, because the registration cards themselves not only contain very valuable information, but they are index cards to the questionnaires, the questionnaires being arranged in the order numbers, and not alphabetically.

Mr. McKENZIE. General, you probably get the point of what I am getting at. When the young men of the country registered and made out their questionnaires and filed them, of course they performed the first act of service, and they were through with that. Then the draft came along and men were called and a number came out. Number 1, we will say, was called into the service, and he was turned over to you.

Gen. HARRIS. Yes.

Mr. McKENZIE. You have his record from that time on?

Gen. HARRIS. Yes.

Mr. McKENZIE. Number 2 was not called. Both questionnaires are with that board?

Gen. HARRIS. Yes.

Mr. McKENZIE. That process went on until the war was ended?

Gen. HARRIS. Yes.

Mr. McKENZIE. I have been unable, I will say to you very frankly, to understand wherein there is any particular value to the Government, after the war is over, in those questionnaires or draft-board records, and the Government, if it had left them with the county draft boards, or had turned them over to the adjutants general of the various States, of course, would not have to employ any clerks or go to any expense in connection therewith, but in shipping them here to Washington, it not only required hundreds of clerks to go through these things; and other than to find out perhaps, for instance, that William Jones has seven affidavits of relatives and friends who swear that he was needed at home, and to have that record on file down here, it is of no value to us now, or to the Government, and not only the clerks were made necessary, but it takes valuable space, and a great deal of it here in Washington, to store those records. Now, unless there is a substantial reason why that should be done, I think the sooner we dismiss those clerks and dump those records out in the Potomac River, or ship them back to the adjutants general, the better off we will be. I may be wrong about that. It is simply a matter of economy that I am thinking of, General.

Gen. HARRIS. At the beginning of the present fiscal year there were charges of desertion against something like 250,000 men outstanding. We, by studying those records, and comparing them with the records of The Adjutant General's office, have been able to reduce the number of charges against men for desertion to about 173,000, so that is work that we have done here. We have removed charges of desertion in one fiscal year against some 50,000 to 75,000 men. That, in itself, is a very important matter. These 500 clerks that I have mentioned have been engaged upon that as well as the other work. The Department of Justice is preparing, or has prepared, to indict something like 200,000 men for evasion of the draft. Recently I, myself, signed 7,500 papers to send to one court in New York City; that is, extracts of records of 7,500 men, to go before that court. That is another part of the work that we have done down there.

Mr. FIELDS. Will you explain to us how the records were valuable in removing the charge of desertion?

Gen. HARRIS. We make a comparison between the draft records and our records that I collected in my office. We received from the draft records the names of these men who were charged with desertion, and I collected from all the draft records everything that the local board and everything that the adjutants general of the States had pertaining to those men. I then went to The Adjutant General's office and collected everything in my records that pertained to those men. I then put those records together in the same folder, and found that a number of those men charged with desertion have been in the Army. And then, by getting the names together, I removed the charge of desertion.

The CHAIRMAN. These records, of course, are comparatively new?

Gen. HARRIS. Yes.

The CHAIRMAN. The Civil War records are all kept here in Washington in The Adjutant General's department?

Gen. HARRIS. They are.

The CHAIRMAN. You are asked to-day, 55 years after the war, to go into those records and find the status of soldiers of that war?

Gen. HARRIS. Many communications of that kind pass through the office every day.

The CHAIRMAN. In the years to come, will these records be equally valuable to the War Department and to the country?

Gen. HARRIS. I think so; certain of them will be.

Mr. McKENZIE. If you will pardon me, Mr. Chairman, I do not think that is a fair question, in line with the questions I have been asking the general. Of course, I know the value of the records with which you are charged, so far as the services of the men are concerned, who were mustered in.

Gen. HARRIS. Yes.

Mr. McKENZIE. Those are all important, and, of course, ought to be preserved for all time; but I am talking about these records that were made up of these boys before they went into the service, and of what value they are I have been unable to see.

Mr. GREENE. Let me ask the general this, and see if he can not start from an agreed statement of facts, anyway. These records, from the beginning of the passage of the selective-service act, which

imposed upon every physically fit male within the ages named in the act a possibility of military service, became Federal records?

Gen. HARRIS. They did; yes, sir.

Mr. GREENE. Because it was a Federal law to be carried out for Federal purposes and to be administered by Federal officers or people appointed to serve under the Federal act?

Gen. HARRIS. Yes.

Mr. GREENE. Under what theory, therefore, could they be logically kept with the States or local boards?

Gen. HARRIS. I fail to see how they can be considered as State records. Of course, they would be valuable records to the States, but I am furnishing, under this same appropriation, statements of service of all the men who served in the World War to the adjutants general of the States, and I think these will give them all the information they really need.

Mr. GREENE. But that, of course, only applies to what might be termed post administration duty, because those are the men who actually did serve, and the Federal Government is really desirous of knowing what men it called to the service, what men served, or what men it once imposed the possibility of service upon, and who, for some lawful reason, did not serve. Is not that a part of the Federal record?

Gen. HARRIS. I have a large force of clerks now answering questions about those records.

Mr. GREENE. They are distinctly and essentially Federal records?

Gen. HARRIS. Yes, sir.

Mr. GREENE. I do not see how the Federal Government divides its responsibility for the enforcement of its own laws with any State, or has any logical reason for reposing its own records in State archives.

Mr. McKENZIE. Well, General, is it not true that you had a duplicate record of every one of those registered men?

Gen. HARRIS. No.

Mr. McKENZIE. That was sent to the Judge Advocate General, or to the Provost Marshal General's Office from the various draft boards?

Gen. HARRIS. There was supposed to be a duplicate registration card, but not questionnaire.

Mr. McKENZIE. Certainly. Now, what is the questionnaire? That is what I am talking about, those great carloads of stuff that was sent here, simply the questions and answers of the men before their cards came in.

Gen. HARRIS. The registration card is really, you might say, just an index, or with possibly a synopsis of what is contained in the questionnaire. It is simply something that you can consult readily, but the questionnaire is the original or complete record.

Mr. GREENE. That is the basis upon which it was determined whether a man should or should not serve?

Gen. HARRIS. Yes.

Mr. GREENE. Under the Federal law?

Gen. HARRIS. The registration card is simply a convenient index.

Mr. McKENZIE. But you have nothing to say about that?

Gen. HARRIS. No.

Mr. McKENZIE. The local and district boards determined that question, and had jurisdiction over those questionnaires?

Gen. HARRIS. Yes; that is true.

Mr. GREENE. But the local and district boards were simply so designated because of a matter of geography, and not as a matter of jurisdiction or originating locally?

Gen. HARRIS. That is true.

Mr. GREENE. The jurisdiction originated by an act of Congress. They were national citizens qualified to enforce that law, not State or local citizens.

Mr. McKENZIE. But The Adjutant General had no jurisdiction over those questions.

The CHAIRMAN. General, you made a statement a moment ago that even to-day you receive many letters regarding those records, and that you employ quite a number of clerks answering those letters and giving information contained in the records?

Gen. HARRIS. I do.

The CHAIRMAN. As the years roll on, will not that work grow in proportion?

Gen. HARRIS. I hope that the work will grow less. I know very well that it will take a very much smaller force of clerks, because I hope that by the end of this fiscal year to complete the comparison of the registration cards and have them in two complete sets, and also to have each questionnaire in its proper place. It has been necessary for me to check every questionnaire, for if it is not in its proper place, of course, it is lost when a search is made. That work, I hope, will be very nearly finished by the end of the fiscal year, and I confidently believe that after we dispose of the draft deserters and the draft evaders that a force of 50 clerks will be ample to handle that correspondence for the next two or three years, and after that it will dwindle down to a smaller force; but there will always be inquiries in regard to those records—there is no question about that—because I signed two letters this morning before I left my office relating to Civil War records.

Mr. McKENZIE. We do not have any draft records. You do not mean that you get any inquiries about the draft records of the Civil War?

Gen. HARRIS. I have draft records for the Civil War, but we do not have to consult them often, because of the fact that my predecessor made a transcript of all of the original records and put that on a card, and I very seldom have to refer to the original records. They just extracted the information and placed it on cards, and we can get it very quickly.

Mr. McKENZIE. It is very natural that you would get some letters in connection with these matters, because they are all in your charge now?

Gen. HARRIS. Yes.

Mr. McKENZIE. But it is an expense to the Federal Government, in my judgment, that could have been avoided. Of course, I can understand how some few neighbors might get into a dispute about some young man who did not go into the service, and one would say that he got out on this excuse, and another that he got out on some other excuse, and they want to find out about it, and so they write down to find out what his questionnaire says about it, and that shows, of course, but I can not see much value in that to the Government.

Mr. FIELDS. Suppose a man were ill or incapacitated, and he was charged with being a draft evader. The Government can go to that record and see why he did not go into the service?

Gen. HARRIS. I really do not see how my office could have functioned during the year without those records. I was very much surprised to find out how much use they were to me.

Mr. DENT. Perhaps you have answered this in a way a little while ago. Exactly what form does your permanent record take, after you have made the comparison down there in the office, as to the individual man; what does it show?

Gen. HARRIS. If a man is erroneously charged with desertion, we make a notation that he enlisted and served in such and such an organization in the Regular Army or in the Navy, or whatever the circumstances are. We make a notation of that on the record.

Mr. DENT. You compile a brief synopsis of each and every man's record, after making the comparison between the questionnaire and the card, so as to show the name of the man and his locality?

Gen. HARRIS. We are possibly talking at cross-purposes. We make no comparison with my record, except in the case of those men who are charged with desertion.

Mr. DENT. You are not, then, making a record for The Adjutant General's office after making this comparison; you are simply going through the data so that you will be able to?

Gen. HARRIS. Then we make a comparison, and note on our records in The Adjutant General's office the fact that he was charged with evading the draft erroneously, and note on the draft record the fact that the man served in the Regular Army.

Mr. DENT. When he served?

Gen. HARRIS. When and where, so there would be no question in the future.

Mr. DENT. So you have got a synopsis of each man's record after you have made this comparison in your office?

Gen. HARRIS. Yes. As a matter of fact, The Adjutant General's records and the draft records are now together in the same folder, but I am preparing to separate them and put the draft records, with the proper notation, back with their records and the military records back with my records.

Mr. DENT. In other words, if John Jones was drafted at Montgomery, Ala., and went into such and such a regiment of Infantry, and served in such and such a division until the end of the war, you have got that complete?

Gen. HARRIS. Absolutely, and it is arranged or checked for each man.

Mr. FIELDS. It is apparent, then, that some men were charged with desertion or evading the draft who, it is shown upon the questionnaire, actually volunteered and served in the Army or Navy?

Gen. HARRIS. Fifty thousand, I should say were charged with desertion who were in the Army.

Mr. FIELDS. If you did not have these records, if only for the purpose of correction and turning them back to the State, it might happen that a man might be charged with being a deserter or a draft evader when he actually served in the Army or Navy?

Gen. HARRIS. Yes; that is true.

Mr. FIELDS. I am very much opposed to any state of affairs that would permit a condition like that, regardless of the number of clerks it may require.

Gen. HARRIS. In regard to the cost of keeping the records, there is no question but that the cost to the Government of the United States, or to the States, will be very much less by having them here in one central file than in having them in 48 separate files, because I am sure it will not take as many as 48 clerks after the next fiscal year to handle those records here.

Mr. FIELDS. If they are handled under one system, they are kept more easily!

Gen. HARRIS. Yes.

Mr. FIELDS. And by men who will know how to get at them?

Gen. HARRIS. Yes, sir.

Mr. GREENE. They are standardized, of course, by being standardized?

Gen. HARRIS. Yes. I would like to state that I prepared, about the 1st of December, to increase the clerical force so as to finish this work of preparation of statements of service during the fiscal year. I had several conferences with the Secretary of War about the matter, and I made application to the civil service for clerks. They informed me that the clerks were not in the city of Washington, but would have to be brought into the city. The Secretary stated, to use his language, that it would be almost a crime to bring any more clerks into the city of Washington.

At a hearing about that time before the legislative, executive, and judicial appropriation subcommittee I explained the situation to Mr. Good, the chairman of the committee, and he suggested that instead of attempting to employ additional clerks for this work, it would be far better to do as much as I could during this fiscal year with the clerks that I already had, and depend upon Congress to reappropriate the money. I explained this to the Secretary of War, and he directed me to cease my efforts to secure any clerks from outside of the city of Washington, which I did, and that was the cause of the delay. The unexpended balance will be ample, I anticipate, to complete the work.

The CHAIRMAN. You will formulate the language?

Gen. HARRIS. I will.

The CHAIRMAN. And put it in your hearing?

Gen. HARRIS. Yes. The approved language is as follows:

THE ADJUTANT GENERAL'S OFFICE.

Completion and preservation of the selective-service records and the preparation of statements of service for adjutants general of States: That the unexpended balance of the \$3,500,000, reappropriated in the Army appropriation act for the fiscal year 1920, approved July 11, 1919, for the completion, preservation, and transportation of the records pertaining to the draft under the act entitled "An act to authorize the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, including the employment of the necessary clerical and other help for duty in the office of The Adjutant General of the Army in connection with the arrangement, operation, and maintenance of the files of those records and for the employment of clerical help required to furnish to the adjutants general of the several States statements of service of all persons from those States who entered the military service during the war with Germany, is hereby reappropriated and made available for the fiscal year 1921, for all expenses, including the employment of clerical and

other help in the office of The Adjutant General of the Army, necessary for the completion and preservation of the selective-service records and the completion of the work of furnishing statements of service to adjutants general of States: *Provided*. That this appropriation shall be distributed by such officer as may be designated by the Secretary of War for the purpose.

Mr. GREENE. Will you also put in your hearing the amount of the unexpended balance?

Gen. HARRIS. I will read that now into the hearing.

Mr. GREENE. At your convenience, General.

Gen. HARRIS. We have expended or obligated up to March 15, \$1,750,071.83, leaving a balance of \$1,749,928.17. I anticipate we will expend between now and June 30, \$950,000, so that the probable unexpended balance on June 30 will be \$799,928.17.

The CHAIRMAN. General, will you also kindly put in the hearing figures to show how many recruits you enlisted under your intensive drive for 84,051 recruits to March 23, that is just one week before the drive was to finish?

Gen. HARRIS. My reports bring us to Friday of last week.

The CHAIRMAN. But you will put it in for this week also?

Gen. HARRIS. I will have that information Tuesday morning, if that will not be too late for you, or Monday afternoon.

The CHAIRMAN. Well, I think if you can have it by Monday afternoon and put it in at that time, it will be helpful in some respects.

Gen. HARRIS. I will do that; yes, sir. The reports received up to the end of this week show a total of 21,712 enlistments since the opening of the drive on January 18, 1920. During the last week the enlistments totaled 2,863.

Mr. GREENE. Do your present estimates contemplate the possibility that you will need any extra force if the pending Army reorganization bill goes through and certain duties which are therein intrusted to the Adjutant General's office that have hitherto been performed during the war by the General Staff are retained as parts of the law?

Gen. HARRIS. I noticed this morning that the Senate Appropriations Committee provided \$2,000,000 for the Adjutant General's office, in addition to what is known as the regular roll. If that amount is appropriated, I feel sure I will be able to handle all the work that is turned back to the Adjutant General's office, as well as the work we are now doing.

Mr. GREENE. You have in mind, of course, the particular thing I alluded to, that is the personnel section, and so on, which was formerly in the Adjutant General's office, and is now to go back there, if this becomes a law?

Gen. HARRIS. The fund provided in the Senate bill will be sufficient to handle that.

The CHAIRMAN. What Senate bill?

Gen. HARRIS. The appropriation bill—the legislative, executive, and judicial appropriation bill.

The CHAIRMAN. You mean the Senate amendment?

Gen. HARRIS. The Senate amendment. The House provided \$1,850,000, and the Senate increased it to \$2,000,000.

Mr. DENT. That is for the clerical force?

Gen. HARRIS. That is for the clerical force.

**STATEMENT OF BRIG. GEN. MARLBOROUGH CHURCHILL,
DIRECTOR OF MILITARY INTELLIGENCE.**

The CHAIRMAN. Gen. Churchill, the item in which you are especially interested is on page 3, "Contingencies, Military Intelligence Division, General Staff Corps." The committee will be pleased to hear any statement that you may desire to make.

I see that the estimate reduces the amount from \$400,000, which was appropriated in the 1920 bill, to \$100,000 for the 1921 bill.

Gen. CHURCHILL. I did not understand it that way, sir. I thought it was \$400,000.

Gen. LORD. I think there is a misprint there, Mr. Chairman. This was reduced from \$654,375, the original estimate, to \$400,000 by the Secretary of War.

The CHAIRMAN. This, then, is a misprint here?

Gen. CHURCHILL. Yes.

The CHAIRMAN. We will be very glad to hear you, General.

Gen. CHURCHILL. Mr. Chairman, I have prepared an itemized statement of the way in which the total amount of \$400,000 is proposed to be used, and also an analysis of each one of those items. I have had that mineographed, and there are enough copies here so that each member of the committee can have one, and I think the most direct way might possibly be, if the committee would look that over and ask me about any point that may not be clear, or else I might read the whole analysis.

Mr. FIELDS. Put the analysis in the record.

The CHAIRMAN. We can put the total analysis in the record of the hearings.

(The analysis referred to is as follows:)

**ESTIMATE OF APPROPRIATIONS REQUIRED FOR THE SERVICE OF THE FISCAL YEAR
ENDING JUNE 30, 1921.**

CONTINGENCIES, MILITARY INTELLIGENCE DIVISION, GENERAL STAFF.

For contingent expenses of the Military Intelligence Division, General Staff, including the purchase of reference books, newspapers, periodicals, drafting, photographic and office supplies, postage and registry stamps, maps, plates, and cuts; the cost of printing and binding instruction books, reports, summaries, codes, and other secret and confidential documents, and for lithographing secret and confidential maps; extraordinary expenses of the military attachés and their assistants in the collection of military information abroad; necessary expenses incident to the collection and verification of military information at home; cost of tuition and textbooks for instruction of officer students of foreign languages; necessary expense of military observation on our frontier and outlying foreign possessions; necessary expense connected with the investigation and prevention of graft and fraud in the administration of Army; necessary expense connected with code and cipher work, and for the payment of clerks, stenographers, draftsmen, research clerks, translators, cryptographers, photographers, investigators, and messengers, to be expended under the direction of the Secretary of War, \$400,000: *Provided*, That section 3648, Revised Statutes, shall not apply to subscription for foreign and professional newspapers and periodicals to be paid for from this appropriation.

ESTIMATED EXPENDITURES, 1921.

1. Purchase of dictionaries, encyclopedia, professional books, and reference books.....	\$500
2. Subscriptions to newspapers and periodicals, domestic and foreign.....	1,010
3. Drafting supplies, including drawing paper, tracing paper, inks, and sundries.....	750
4. Pay of messengers.....	2,880
5. Extraordinary expenses of military attachés abroad and of their assistants in the collection of military information.....	82,000

6. Purchase of general office supplies, postage and registry stamps, and photographic supplies.....	\$6, 400
7. Printing and binding of instruction books, maps, etc., including the cost of plates and cuts.....	6, 035
8. Necessary expenses incurred in interviewing individuals called to verify and amplify military information on file.....	3, 300
9. Cost of tuition, textbooks, and charts necessary in instruction of officers studying Chinese and Japanese.....	9, 000
10. For necessary expenses of military observation on our frontiers and in our outlying possessions.....	39, 000
11. Payment of clerks and stenographers, investigators, draftsmen, research clerks, photographers, and translators.....	170, 625
12. For necessary extraordinary and travel expense involved in the investigation and prevention of graft and fraud in the administration of the Army.....	18, 500
13. For necessary expense connected with code and cipher work in the United States Army.....	60, 000
14. Total.....	400, 000

EXPENSES MILITARY OBSERVERS ABROAD.

15. Expenses of military observers abroad.....	25, 000
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GENERAL ANALYSIS.

In comparing estimates for appropriations under the above heading, it will be well to consider the personnel engaged on Military Intelligence at various times. In 1916, the intelligence personnel was limited to 2 officers and 2 clerks. The estimate for contingencies for the fiscal year 1917 was \$11,000, and for expenses of military observers abroad was \$15,000. At the same time there were 16 military attachés.

In November, 1918, the intelligence personnel consisted of 790 officers, a civilian personnel of 1,156, and 100 officers on military attaché duty. During 1920 we have had 60 officers on this duty.

During the fiscal year 1920, the average personnel was 85 officers and 152 clerks. For 1921 the plan is to have 75 officers and 140 civilian employees, and contingent expenses approximately \$400,000.

1. Purchase of dictionaries, encyclopedias, professional books, and reference books. \$500.

During the fiscal year 1920, \$500 will be expended for various books. The result is a good working library of standard references, but new projects and studies require additional references not current. The sum is based on the purchase of 200 books at an average cost of \$2.50 each.

2. Subscriptions to newspapers and periodicals, domestic and foreign, \$1,010.

A fruitful source of military information is to be found in newspapers and periodicals, if properly studied and analyzed.

Subscriptions abroad for military attachés are based on 31 military attachés being allotted \$10 each for this purpose, or \$310.

Subscriptions at home are based on 65 dailies at \$8, or \$520. This is based on 3 subscriptions each for 10 of the largest cities, 2 each for the 10 next largest, and 1 each for the 15 next in population.

Subscriptions for weekly and monthly periodicals are based on 60 such periodicals at \$3 each, or a total of \$180. During 1920, \$2,521 approximately will be spent for this item.

3. Drafting supplies, including drawing paper, tracing paper, inks, and sundries, \$750.

The information collected must be recorded in such manner as to be immediately available for the use of the staff and field commands. This is done by keeping foreign strategic maps up to date at all times and involves a supply of drafting material including tracing paper and linen, drawing paper and ink, thumbtacks, erasers, pens, and other articles, to a total of \$750. During 1920, \$1,200 will be expended for this item.

4. Pay of messengers, \$2,880.

This provides for four messengers, the number used during 1920.

5. Extraordinary expenses of military attachés abroad and of their assistants in the collection of military information, \$82,000.

This item is based on 31 military attachés and ten assistants at an average of \$2,000 each per annum, and is intended to cover any authorized expense incurred in the collection of military information. In fiscal year 1920, the sum of \$105,250 will be spent for this purpose.

None of the ordinary expenses of a military attaché are paid from any fund other than that appropriated for the Army, which includes personal items such as pay, commutation of quarters, fuel and light, mileage for authorized journeys, and im-personal items such as office rent, stationery, and office supplies. The diplomatic service appropriations are not available to military attachés whose connection with that service is only incidental.

6. Purchase of general office supplies, postage and registry stamps, and photographic supplies, \$6,400.

General office supplies to include only such articles as are necessary and not furnished by the supply departments, estimated at \$3,000. Postage and registry stamps necessary for foreign and domestic correspondence in certain cases, estimated at \$100.

The photographic supplies admit of economical reproduction of maps, charts, etc., by photostat process. If the same work were done by hand-drafting methods, the cost would be much greater. The amount asked for this purpose is \$3,300. In 1914 and 1915, when Military Intelligence Division was practically nonexistent, \$2,500 was allowed and used for this item.

In the fiscal year 1920 the same sum was expended.

7. Printing and binding of instruction books, maps, etc., including the cost of plates and cuts, \$6,035.

This item covers the expense of all printing and lithographing required by the Military Intelligence Division: the printing to be done at the Government Printing Office, and the lithographing to be done at the same office or at the central map-reproducing plant of the Engineers. The printing is to be limited to instruction books, reports, summaries, code books, etc. The lithographing limited to such foreign maps, graphs, and charts as are necessary for use of our forces for instruction as well as for service. The estimated cost of the printing and lithographing is itemized below.

Power and light.....	\$240
Gas.....	30
Water.....	5
Repairs.....	50
Paper, 15,000 pounds, average cost 20 cents per pound.....	3,000
Graining 600 plates for maps, at 75 cents each.....	450
Ink, chemicals, and sundries.....	300
Production of 400 cuts for handbooks, at \$4.90.....	1,960

Total..... 6,035

8. Necessary expenses incurred in interviewing individuals called to verify and amplify military information on file, \$3,300.

Information collected is of doubtful value unless verified and kept up to date. It has been found that personal interviews are more efficient for this purpose than where written communication is established. While some individuals who have information are able to come to Washington at their own expense for interviews, the others possessing valuable information can not afford the expense of such a trip. To limit verification or amplification of information of national importance to the financially independent would not only be wrong in theory, but would limit the efficiency of the service.

This expenditure is necessary in properly conducting monograph and handbook work; it is based on an average expenditure of \$275 per month. This same sum will be expended during 1921.

9. Cost of tuition, textbooks, and charts necessary in instruction of officers studying Chinese and Japanese, \$9,000.

A working knowledge of foreign languages possessed by a portion of our officers is absolutely necessary if staff efficiency is expected.

Numerous officers are familiar with French, Spanish, German, Italian, Russian, and other European languages, but few have any familiarity with Oriental languages, particularly Japanese and Chinese. It has been the policy in the past to order a limited number of officers to Japan and China for the purpose of studying the language of these countries.

This item covers tuition, two lessons daily, and cost of textbooks, charts, etc., for 10 officers in Japan and 5 in China, estimated at \$50 per month per person.

10. For necessary expenses of military observation on our frontiers and in our outlying possessions, \$39,000.

In order to be prepared for eventualities, it is necessary to maintain garrisons on our southern border and in our outlying possessions; the maintenance of troops for this purpose does not however wholly satisfy our military responsibilities, as we

must be in a position to maintain constant observation of all foreign activities in these regions.

It is to be noted that the project is limited to the military departments which include the Mexican border and those in which Japanese activity is prevalent. The expense of observation, which includes transportation expense and occasional personal service, is as follows:

Western Department.....	\$12,000
Hawaiian Department.....	6,000
Philippine Department.....	6,000
Panama Canal Zone.....	3,000
Southern Department.....	12,000
	<hr/> 39,000

11. Payment of clerks and stenographers, investigators, draftsmen, research clerks, photographers and translators, \$170,625.

This item includes all the civilian personnel except messengers required for properly conducting the work of M. I. D.

The number of civilians now requested is only 140 and the total amount of their compensation is \$170,625.

The personnel includes translators, cryptographers, geographers, photographers, draftsmen, stenographers, executive clerks, and clerks familiar with modern filing and library methods.

The number of civilian employees called for was arrived at after a most careful and exhaustive study of the requirements of efficient operation, and this number is regarded as the minimum below which efficiency can not be expected.

The number of civilians in each branch, the annual unit compensation, and the totals are as shown below.

G-2-A (POSITIVE).

	Translators.	Clerks.	Stenographers.	Research clerks.	Amount.
\$1,600.....	2				\$3,600
\$1,600.....	6	1			11,200
\$1,400.....	4	4	1	10	28,600
\$1,200.....		12	10		26,400
Total.....	12	17	11	10	67,800

G-2-B (NEGATIVE).

	Stenographers.	Filing clerks.	Clerks.	Investigators.	Amount.
\$2,085.....				3	\$6,245
\$1,400.....			6		8,400
\$1,200.....	10	1	5		19,200
\$1,100.....	4	2			6,600
Total.....	14	3	11	3	40,445

G-2-C (GEOGRAPHIC).

	Research clerks.	Stenographers.	File clerks.	Map cataloguers.	Draftsmen.	Photographer.	Amount.
\$2,400.....	1						\$2,400
\$2,200.....	1						2,200
\$2,000.....	2						4,000
\$1,800.....	2						3,600
\$1,600.....	2						3,200
\$1,400.....		2			1		4,200
\$1,300.....		2					2,600
\$1,200.....		3		2			6,000
\$1,100.....			1				1,100
\$980.....						1	980
Total.....	8	7	1	2	1	1	30,280

G-2-E (EXECUTIVE).

	Clerks.	Amount.
\$1,800.....	1	\$1,800
\$1,600.....	1	1,600
\$1,400.....	4	5,600
\$1,200.....	16	19,200
\$1,000.....	3	3,000
\$900.....	1	900
Total.....	26	32,100

12. For necessary extraordinary and travel expense involved in the investigation and prevention of graft and fraud in the administration of the Army, \$18,500.

The disposition of vast quantities of military supplies incident to demobilization of our Army opens the way for graft and fraud which if not prevented may assume very serious proportions. A section of the Military Intelligence Division organized for the investigation and prevention of graft and fraud in the Army was directly instrumental in the recovery and restitution of \$9,153,311.73 worth of United States property and by reduction of claims in the period August 1, 1918 to March 25, 1920. During the same period it investigated 3,212 cases which resulted in 1,891 arrests and 1,024 convictions before civil and military courts.

At the above rate the annual money value of property recovered by the United States and by reduction of claims is \$5,491,986.96. The estimated cost of this service is, therefore, only 3 per cent of the value of the property recovered through its activity in one year.

The itemized cost of this service is as follows:

Salary of 17 investigators at \$2,400.....	\$40,800
Salary of 8 stenographers at \$1,200.....	9,600
Extraordinary expenses of 17 investigators at \$500 per annum.....	8,500
Travel expenses including per diem allowance.....	10,000
Total.....	68,900
Less salaries of investigators and stenographers (included in item 11).....	50,400
	18,500

During 1920, \$95,000 in addition to this amount will be expended under this item.

13. For necessary expense connected with code and cipher work in the United States Army, \$60,000.

One of the most important and necessary items in connection with the operation of the War Department is the compilation and preparation of code books for use not only between the War Department and the military forces in the insular possessions of the United States, but also of our military attaches abroad.

By reason of the fact that these code books are continually subject to attack by all other nations, it is necessary that new ones be prepared at intervals.

In addition to the code books, themselves, the cipher tables used in connection with the code books are continually changed at irregular intervals for purpose of security and protection.

All of this work is performed by the code and cipher section of the Military Intelligence Division.

Sixty thousand dollars will be expended on this work during 1920.

Mr. McKENZIE. Item No. 5 is a pretty big item, and I want to ask you about that, \$82,000 for extraordinary expenses of military attachés. What are the extraordinary expense that you have to pay?

Gen CHURCHILL. That covers, up to \$2,000 for each attaché per year, any authorized expenses which he incurs in the procurement of information. It has been found absolutely impossible for an attaché to live in a foreign capital on his pay, and obtain any reasonable amount of information. For the last two years this amount has been allowed each man, and the results have been very satisfactory.

Mr. McKENZIE. Are you estimating for 41 foreign military attachés?

Gen. CHURCHILL. Yes; not 41 in the principal countries, but in some countries it is necessary to have assistants.

The CHAIRMAN. I understand that the War Department has about 28 attachés in foreign countries, so, according to your statement, there will be 13 assistants.

Gen. CHURCHILL. We have at present 30 attachés, and 37 assistants.

The CHAIRMAN. 37 assistants?

Mr. CHURCHILL. Yes.

The CHAIRMAN. That would be 67, in all?

Gen. CHURCHILL. In all, yes.

The CHAIRMAN. And you propose to reduce that to 42?

Gen. CHURCHILL. Yes; because there are assistants maintained at some posts now that will not be required.

The CHAIRMAN. Have you a statement, General, showing where these different attachés are located, that is, in what countries?

Gen. CHURCHILL. Yes, sir; I have it.

The CHAIRMAN. Would there be any objection to stating that in the record?

Gen. CHURCHILL. No, sir; not the slightest. I have a printed list.

The CHAIRMAN. That printed list could go in with your other statement?

Gen. CHURCHILL. Yes.

(The list referred to is as follows:)

MARCH 1, 1920.

List of United States military attachés, assistants, and observers.

Military attachés.	Country.	Assistant military attachés.
Col. John D. Long, Infantry, Buenos Aires.	Argentina, Paraguay, Uruguay.	
Lieut. Col. Allan L. Briggs, Infantry, Vienna.	Austria.....	
Col. John R. Thomas, jr., Infantry, Brussels.	Belgium.....	First Lieut. Frederick W. Meert, A. S.
Col. Richard H. Jordan, Coast Artillery Corps, Rio de Janeiro.	Brazil.....	
Lieut. Col. Alexander W. Chilton, Infantry, Santiago.	Chile.....	
Lieut. Col. Walter S. Drysdale, Infantry, Peking.	China, Siam.....	Lieut. Col. Benjamin B. McCroskey, Infantry (M. O. in field); Lieut. Col. John Magruder, Field Artillery; Maj. Wallace C. Philoon, Infantry.
Maj. Frederick C. Johnson, Cavalry, Bogota.	Colombia.....	
Col. Paul W. Beck, Infantry, Habana...	Cuba.....	
Col. E. R. Warner McCabe, Field Artillery, Prague.	Czecho-Slovakia.....	Capt. Frank C. Jedlicka, Cavalry.
Col. Thomas W. Hollyday, Field Artillery (M. O. in Baltic Provinces), Copenhagen.	Denmark.....	First Lieut. Robert F. Kelley, Infantry (M. O. in Baltic Provinces).
Maj. Edwin N. Hardy, Cavalry, Quito.	Ecuador.....	
Lieut. Col. Charles C. Allen, Infantry, Cairo.	Egypt.....	
Col. Oscar N. Solbert, Corps of Engineers, London.	England.....	Lieut. Col. Hamilton E. Maguire, Field Artillery; Maj. Melvin A. Hall, A. S.; Maj. Douglas H. Gillette, Corps of Engineers; Maj. Robert F. Hyatt, Field Artillery.
Col. T. Bentley Mott, United States Army, retired, Paris.	France.....	Col. Conrad S. Babcock, Cavalry; Col. R. John West, Infantry; Lieut. Col. Lewis H. Brereton, A. S.; Maj. Donald Armstrong, Coast Artillery Corps; Maj. John D. Townsend, Infantry; Capt. Walter V. Cotchett, United States Army, retired; Capt. John S. Winslow, Field Artillery.

List of United States military attachés, assistants, and observers—Continued.

Military attachés.	Country.	Assistant military attachés.
Maj. Louis A. O'Donnell, Field Artillery, Guatemala City.	Guatemala, Honduras, Nicaragua, Salvador.	
Col. Evan M. Johnson, Infantry, Rome.	Italy.....	Lieut. Col. John M. Eager, Field Artillery; Lieut. Col. James E. Chaney, A. S.
Col. Charles Burnett, Cavalry, Tokyo.	Japan.....	Lieut. Col. William J. Davis, Infantry; Lieut. Col. Alexander G. Gillespie, Coast Artillery Corps.
Col. Martin C. Shallenberger, Infantry.	Jugoslavia, Greece....	First Lieut. William W. Jenna, Infantry.
Col. Charles Young, United States Army, retired, Monrovia.	Liberia.....	
Lieut. Col. Robert M. Campbell, Cavalry, Mexico City.	Mexico.....	Maj. Edward W. Burr, Cavalry; Maj. Albert R. Goodman, Marine Corps.
Col. Edward Davis, Cavalry (M. O. in Germany), The Hague.	Netherlands.....	Lieut. Col. Albert L. Loustalot, Coast Artillery Corps (M. O. in Germany); Maj. James B. Ord, Infantry; Maj. Horace L. McBride, Field Artillery; First Lieut. Oliver W. McGruchy, Quartermaster Corps (M. O. in Germany).
Col. Fred T. Cruise, General Staff, Panama.	Panama.....	
Col. Frank L. Case, Cavalry, Lima.	Peru, Bolivia.....	
Lieut. Col. Elbert E. Farman, jr., Cavalry (M. O. in Poland), Warsaw.	Poland.....	Maj. Michael J. Fibich, Field Artillery; Capt. Trevor W. Swett, Infantry (M. O. in Poland).
Lieut. Col. Arthur Pollon, Cavalry (M. O. in field), Bucharest.	Roumania.....	Capt. William E. Lucas, jr., Infantry (M. O. in Roumania and adjacent territory); First Lieut. Carl B. Byrd, Cavalry.
Lieut. Col. Thomas F. Van Natta, jr., Cavalry, Madrid.	Spain, Portugal.....	Capt. Oscar B. Ralls, jr., Field Artillery.
Lieut. Col. William M. Colvin, Coast Artillery Corps, Stockholm.	Sweden, Norway.....	
Col. William F. H. Godson, Cavalry, Berne.	Switzerland.....	Lieut. Col. Ivens Jones, Field Artillery; Maj. Ernest H. Schelling, Infantry.
Col. William A. Castle, Infantry (M. O. in South Russia), Constantinople.	Turkey, Bulgaria.....	Col. Creed F. Cox, General Staff (M. O. in South Russia); Lieut. Col. Stephen W. Winfree, Cavalry (M. O. in the field).
Maj. John F. Landis, Infantry, Caracas.	Venezuela.....	

MILITARY OBSERVERS NOT SHOWN ABOVE.

Germany: Col. Jacob M. Coffin, Medical Corps, Berlin.

Hungary: Lieut. Col. Charles L. Joly, C. W. S., Budapest.

The CHAIRMAN. And there is another large item, \$170,625, for the payment of clerks and stenographers, investigators, draftsmen, research clerks, photographers, and translators. How many people have you employed now, General?

Gen. CHURCHILL. We have about 140 now. We propose to reduce that slightly. The number for each group of the office is shown on the last pages of this analysis. The total is 140. Unlike the other parts of the War Department, the Military Intelligence Division has to defend its own appropriation for clerical force. I do not get any clerks out of the general roll. This item would be entirely stricken out if I were provided with clerks from the general roll.

The CHAIRMAN. Well, do you have special clerks or stenographers in whom you have sufficient confidence to allow them to copy any statements that may come into your office, or do your officers do that themselves?

Gen. CHURCHILL. Well, there are certain classes of work which only an officer would see or would copy, but we have some clerks in whom we have a great deal of confidence, people that have been with

the Military Intelligence now for three years, and have been thoroughly tested out, and our people are of a very high class.

The CHAIRMAN. I see your statement is quite complete in these various items that you have divided the expenditure into in this statement that you are filing with us.

Mr. GREENE. How many military attachés, General, do you hope to provide for in this appropriation?

Gen. CHURCHILL. About a total of 41.

The CHAIRMAN. That is attachés and assistants?

Gen. CHURCHILL. And assistants; yes.

Mr. GREENE. Does your experience so far, since the armistice and the approximate return to a peace status, develop the fact that military information now of the character particularly required by your bureau is more likely to be available than it was during the period of the war?

Gen. CHURCHILL. Yes, sir; I should say that this next year is going to be one of the best years for getting information on account of the fact that the records of the central empires are so accessible.

Mr. GREENE. Does it develop, too, that whereas, doubtless for tactical and battle purposes generally, quick exchange of information may have been had among the Allies during operations, yet now you have an opportunity, through attachés, to get closer to the postwar analysis of operations and the mistakes made in them?

Gen. CHURCHILL. Yes, sir.

Mr. GREENE. And the people are beginning to talk freely about weaknesses developed during operations, either in arms or in equipment, or in tactical operations?

Gen. CHURCHILL. Yes, sir; and in that an attaché can obtain facts of benefit to all that postwar discussion.

Mr. GREENE. Much of it not being made public through the public print, but to be gathered in the usual form of social intercourse which they have, and observation?

Gen. CHURCHILL. And observation, and through personal influence.

Mr. GREENE. Many things which the countries during the time of war would have been fearful that the enemy would find out are now being discussed quite frankly?

Gen. CHURCHILL. Yes.

Mr. MCKENZIE. In peace times, in foreign countries, of course, these military attachés do not wear the uniform?

Gen. CHURCHILL. No, not ordinarily.

Mr. MCKENZIE. Well, I was thinking that if he did, he would not have a good chance to find out what is going on.

Mr. GREENE. I think it is perfectly fair to say in the record that the gentlemen in the military intelligence service are not supposed to be keyhole artists or peeping Toms, but that an intelligent, patriotic officer of the Army is supposed to be on duty anywhere he may be, and to learn something, and he can do that with every essential detail consistent with a gentleman.

Mr. FIELDS. But it may become necessary for him to do that without his uniform at times, General, does it not?

Gen. CHURCHILL. Well, in normal times it has not been customary for an attaché to wear his uniform. But he is known, of course, and it would be unethical for him to adopt any practices that the other nations could take exception to. But naturally, the longer he stays in a country the more sources of reliable information he develops, so that after he has been in a country for a couple of years

he is in a position to hear a great deal of reliable information, in addition to what he can get by going into the war office and asking for it.

The CHAIRMAN. Exactly; the war office or the parliamentary committees give the ordinary information upon request, do they not? I dare say that the report of this committee and the hearings that are printed by this committee find their way into the hands of the military attachés of all the countries that are represented here in Washington.

Gen. CHURCHILL. Yes, sir; they consider that a part of their duty to obtain those copies and send them to their capitals, just as our people consider it their duty to be alive to all those sources of information in foreign capitals.

The CHAIRMAN. Exactly.

Mr. MCKENZIE. I think that is true. The attaché gets the same information along these lines that everyone else gets that takes sufficient interest to read up on all of these reports from the various countries, and he probably can give his judgment on it, which would be worth a good deal more than the average reader's judgment, being familiar with that character of work.

But right along the line of my good friend Greene's suggestion here about a man denying his identity, I do not think that is necessary, because I doubt very much whether a man, with or without a uniform, would find out any deep secret of any country, but my position was simply this, that the American military attaché, before he began a conversation with some man there who he perhaps thought might give him some information, would not have to preface his remark by saying, "I am a military attaché from the United States, so be careful what you tell me." In other words, we get a great deal of information, it seems to me, without fully disclosing our identity, and it is perfectly proper.

Mr. GREENE. Of course, hitherto the suggestion seems to have been in the questions that you people were constantly sleuthing out mysteries, and all that sort of thing. A large part, as I understand it, of your function consists in the gaining and classifying and interpreting all that information about the countries with which we may be more or less in contact, either peaceably or otherwise at times, and the digesting of that information, so that from an analysis of it we may learn their potential war strength and their capacity for endurance in war; is not that true?

Gen. CHURCHILL. That is exactly it; yes, sir.

Mr. GREENE. And that does not involve any keyhole business so much as it does a trained observation and a wise analysis of the customs of the people, the way their land lies, what it produces, what their industrial and other pursuits may be, and the capacity for development in those pursuits, the product of them, how the product is utilized, and what its source of supply of raw material may be, and an infinite variety of similar things?

Gen. CHURCHILL. There is practically no information obtained in what goes to make up our current estimate of the strategic situations which is obtained in an underhanded manner. It is obtained, digested, collated, and assembled simply by the application of a scientific method for the gathering and using of information. It is as clean a game as anybody ever went into.

Mr. GREENE. You people are endeavoring to avoid something that is often characteristic of others. They may be stuffed full of facts, and have no method for using them, because they never assembled them to get them ready to come out when they wanted to use them?

Gen. CHURCHILL. We have adopted a normal product for all our work. We maintain for each country in the world four monographs; one, the combat monograph, including all items of military and naval interest; second, an economic monograph; third, a political monograph; and fourth, a psychologic monograph. The psychologic monograph is simply a study of the state of the mind of the people of that country, so that we will know by what they are likely to be affected, and under what conditions they will support their government, and under what other conditions some other government might influence them by propaganda. The material comes in from all over the world, and is here posted in these monographs, so that at the close of business each day each monograph is complete. Those monographs are rather bulky, and they are not particularly easy to use by a person not trained in their use, so that for the use of the General Staff and of the State Department those monographs are summarized into this work which is called the Current Estimate of Strategic Situation. It covers the world in two volumes. It is a very much boiled down product, just exactly the same as that contained fully developed in the four monographs for each country.

Here, for example, for each country you will find the military situation discussed possibly in two or three pages, the economic in two or three, the political in two or three, and the psychologic in one or two. Those brief estimates are the boiled down result of what you can find extended in the monographs, so that the correct way to use our product is for the person who is interested in a situation in any particular country to call for the Current Estimate of the Strategic Situation, of which there are a good many scattered through such stuff, read that, and then, if that is not full enough, call on us for our monograph.

Mr. GREENE. I do not know what value it may have in the mind of a man trained to judge such things as you are, but to the lay reader, going through the recently published story of his part in the military operations of the Germans, Gen. Ludendorf reveals time after time that whereas the outside world conceived at the outset that the German was almost superhuman as regards military and governmental establishments, it was altogether deceived about it, and that they had their own internal troubles, and that a part of them were produced by these social reactions, by political influences, and the fact that the sources of supply became prejudiced in some way, and that the reaction due to the enemy propaganda was an essential fact at the time in disturbing the morale, all leading to the conclusion that in undertaking to estimate the military or combat strength of any nation you have got to look behind the thin red line rather than spend too much time on that.

Gen. CHURCHILL. You have got to understand all of the four factors.

The CHAIRMAN. General, you have one item here, "Expenses, military observers abroad." What is the need for that appropriation? Have we any military observers with any armies abroad?

Gen. CHURCHILL. Yes, sir; we have officers in south Russia with Denikin. We also have two officers in Berlin where we have not yet established diplomatic relations. We have an officer in Hungary with the American commission, who was rated as an observer, because we have not yet any diplomatic relations, and in several other places, like Poland and in the Baltic Provinces, it has been found essential to make the military attaché not only an attaché but an observer, so that he can go out and accompany the army.

We accredit him to a certain army as well as to the country.

The CHAIRMAN. Would he then be getting a double salary?

Gen. CHURCHILL. No, sir; he gets no double salary.

The CHAIRMAN. Then none of this money for military observers abroad would be used for compensating that military attaché?

Gen. CHURCHILL. There would be nothing for compensating him; no, sir. A military attaché is allowed, for example, to hire a guide or interpreter, whereas the military observer is not, so that in some cases the military attaché who was also a military observer would benefit from that fact, but there would never be any duplication.

The CHAIRMAN. Now, you are asking the same amount this year that you asked last year. Did you expend or obligate the entire amount of last year's appropriation?

Gen. CHURCHILL. Yes, sir; it will be entirely used up before the end of the fiscal year.

The CHAIRMAN. Was it sufficient?

Gen. CHURCHILL. It was sufficient; yes, sir.

The CHAIRMAN. And you do not think there will be any opportunity to reduce this amount?

Gen. CHURCHILL. I think not; no, sir. It is really a comparatively small amount.

The CHAIRMAN. Yes, it is.

Gen. LORD. Mr. Chairman, on page 3 of the bill, under "Contingencies, Military Intelligence Division, General Staff Corps," the Military Intelligence Division is a division in the Office of the Chief of Staff, and in the line of orderly procedure it was recommended that the words "Office of Chief of Staff" be substituted for the words "General Staff Corps."

(Whereupon, at 1.15 o'clock p. m., a recess was taken until 2.30 o'clock p. m.)

AFTER RECESS.

Gen. LORD. We will now call on Col. Ruhlen, who is here representing the Chief of Coast Artillery and will speak for the item of the appropriations found on page 6, Coast Artillery School, at Fort Monroe, Va.

STATEMENT OF CAPT. GEORGE RUHLEN, JR., COAST ARTILLERY CORPS, ASSISTANT TO THE CHIEF OF COAST ARTILLERY.

The CHAIRMAN. Colonel, we will be very glad to hear you explain the item. I see that this is a new item. I see that no appropriation was contained in the bill of 1920 for these specific purposes. That must be some mistake—oh yes, I see, you have segregated the items this time, whereas we used to appropriate the amount in a lump sum.

Capt. RUHLEN. Yes, sir.

The CHAIRMAN. Captain, we will be very glad to hear you now.

Capt. RUHLEN. For several years past the total appropriation for the Coast Artillery School has been \$28,000, except during the war, when they had an additional appropriation to provide for the service at that time.

This estimate of \$37,400 is a slight increase over the last year's appropriation of \$28,000, due to the fact that by the act of July 9, 1918, the Army Mine Planter Service was established and made part of the Coast Artillery Corps. It became necessary upon the establishment of that service as part of the Army to provide the crews and the officers for these vessels.

The CHAIRMAN. They had theretofore been civilians?

Capt. RUHLEN. They had been civilians, and we found, as you are aware, we had great difficulty in keeping them on certain occasions.

We are asking for \$19,500, under the second item on page 6, for the purchase of engines, generators, motors, machines, measuring instruments, special apparatus and material for the division of enlisted specialists. That division not only trains the enlisted specialists for the service of the Coast Artillery elements of sea coast fortifications, but is also the division of the school which trains the enlisted men who are candidates for warrant officers and other positions on the mine planters.

The CHAIRMAN. That is a considerable increase over what the bill that was approved August 29, 1916, before we entered the World War, carried.

Capt. RUHLEN. That carried \$7,000; but you must remember that since then we have increased the Coast Artillery by the national defense act, and have increased the number of enlisted specialists that are necessary to be provided. That increase of \$3,000, from \$7,000 to \$10,000, which was carried in 1919, is due to that fact.

The CHAIRMAN. Now you are proposing to almost double what you carried in 1919?

Capt. RUHLEN. It is necessary to do that in order to procure the special machinery that is required to instruct these men in nautical engineering. We have no nautical facilities of that sort in the sea-coast forts, and the school heretofore has not provided those facilities, but now that we have taken on these 20 mine planters and cable ships, it is necessary that we have the special machinery and the special instruments at the Coast Artillery School to train these men along the lines of duty which they are expected to perform.

Mr. MCKENZIE. Where did you have the machinery and the special articles, etc., for the training of those coast guard men prior to the taking over to that activity by the Coast Artillery?

Capt. RUHLEN. The mine planters have always been under the jurisdiction of the Chief of Coast Artillery, but until the approval of the act of July 9, 1918, they were manned by civilian crews, and what training they had, necessarily they had to get in the usual course of civilian seamen's experience.

The CHAIRMAN. The men who were on the mine planters, as a matter of fact, were able-bodied sailors who were generally connected with the American mercantile marine.

Capt. RUHLEN. Yes, sir. And you understand that our mine service is the best mine service of any army in the world. We have the best controlled mines; it is a very efficient service and rendered very effective aid during war, and these mine planters are one of the

principal parts of that mine service. It is necessary that they be on a high standard of efficiency.

The CHAIRMAN. How many mine planters have we?

Capt. RUHLEN. We have 20 mine planters and cable ships building, in the water and about to be completed.

The CHAIRMAN. Some of them, of course, are in the Philippines and some of them in Hawaii and in other stations, like Panama?

Capt. RUHLEN. Yes, sir; they are allocated to the various defenses of the United States, the insular possessions and Panama.

The CHAIRMAN. Are there any in Alaska?

Capt. RUHLEN. No, sir; we have no defenses in Alaska.

Mr. FIELDS. How many have we completed and in operation?

Capt. RUHLEN. There are 11 in service. There are 9 new ones, of which 7 have just been launched. Two of those are about to be placed in commission. The remaining seven planters will be completed within a month or two.

Mr. McKENZIE. Under whom at the present time—under whose command, I will say—are the men in this mine-planter service, the Coast Artillery or the Navy?

Capt. RUHLEN. They are under the command of the Chief of Coast Artillery.

Mr. McKENZIE. Notwithstanding their activities are on the sea?

Capt. RUHLEN. Yes, sir.

The CHAIRMAN. They are in the harbors, as I understand it.

Capt. RUHLEN. Yes, sir; these are not deep-sea vessels; they keep within sight of land except when they pass from fort to fort.

The CHAIRMAN. They operate in and just outside of the great harbors of this country?

Capt. RUHLEN. Yes, sir. Where we leave off the Navy takes up the mining.

The remaining items of the estimate, Mr. Chairman, are practically the same as they have been heretofore. There was no material increase made in the Coast Artillery by the reorganization act which recently passed the House. The commissioned strength of the Coast Artillery was increased by one officer, the enlisted strength by several hundred enlisted men; so that the activities of the school will be practically the same as they have been heretofore in the past, and when we obtain this new equipment we will be in a position to carry on the functions there as we have heretofore.

The CHAIRMAN. How many men have you at the school? I mean how many officers at the Coast Artillery School?

Capt. RUHLEN. Sixty-seven. The normal capacity of the school in the past has been 50 officers, based on a single course for officers, which extends through a period of one year. In the new program as outlined for service schools, of which this school is a part, we contemplate a maximum number of officer students as follows: In the field officers' course, 30; battery officers' course, 70; basic course, 100. Making a total of 200 officers.

The CHAIRMAN. So that will be a material increase over what you have been having in the past?

Capt. RUHLEN. Yes, sir; but we do not expect to have more than 50 per cent of those officers during the next year, on account of the fact that we have not a great many officers in the Coast Artillery Corps.

The CHAIRMAN. So that at any rate you will have 100 officers as compared to 50 officers normally?

Capt. RUHLEN. Yes, sir.

The CHAIRMAN. Then you are expecting to double the number of officers at the school for the next fiscal year at any rate?

Capt. RUHLEN. Yes, sir.

Mr. McKENZIE. That is over last year?

Capt. RUHLEN. No, sir; over the prewar conditions.

Mr. McKENZIE. Well, you are asking for \$9,400 more this year than you did last year, as I understand it, and that increase is to go into the purchase of machinery and special equipments for the training of these men, as I understood it?

Capt. RUHLEN. No; for the training of enlisted men; not for the training of the officers.

Mr. McKENZIE. And you feel that that increase is necessary, do you?

Capt. RUHLEN. Yes, sir; it is necessary because we must have the equipment, Mr. McKENZIE. We haven't the equipment at the present time.

The CHAIRMAN. You had in the appropriation bill of 1917, before we got into the war, a sum of \$32,000, and this year you are asking for \$37,400?

Capt. RUHLEN. Yes, sir.

The CHAIRMAN. Have you anything else?

Capt. RUHLEN. No, sir; that is all.

The CHAIRMAN. We are very much obliged to you, Captain.

RIFLE RANGES FOR CIVILIAN INSTRUCTION.

Gen. LORD. We would next like to have you hear Gen. Phillips.

The CHAIRMAN. We will be very glad to hear from you, General.

Gen. LORD. You will find the item for Gen. Phillips appears on page 43 of the bill.

STATEMENT OF BRIG. GEN. F. H. PHILLIPS.

The CHAIRMAN. This appropriation is for quartermaster supplies and services for rifle ranges for civilian instruction. You received in the appropriation bill for this fiscal year \$100,000, and you are asking for \$300,000 in this appropriation bill for the fiscal year 1921. What is the reason for that very large increase?

Gen. PHILLIPS. We asked for the same amount last year and did not get it.

The CHAIRMAN. Did you get along with your \$100,000?

Gen. PHILLIPS. We hardly made a start. We required the expenditure of about \$80,000 of that \$100,000 to conduct the national matches. The appropriation bill for the fiscal year ending 1917, carried \$360,000, and has been cut various amounts during the period of the war because civilian activities were decreased during the war.

The CHAIRMAN. Well, will you kindly explain to the committee what you propose to do with that amount of money, in detail?

Gen. PHILLIPS. We propose to furnish the equipment for rifle ranges in any locality in the United States in which the citizens are interested enough to take up rifle practice and will provide their

own land on which to install this equipment. The law makes a requirement that the National Guard shall maintain a certain strength for congressional districts, and the percentage of congressional districts in which a rifle range is now located is very small. We can not take the equipment from the Army to install on these ranges because all of the ranges we have are needed. We are endeavoring to carry out the provisions of section 113 of the national defense act to make this training universal throughout the country, and we can only do it by progressive organization.

The CHAIRMAN. Right in that connection, do you limit the age at which a man can receive rifle training?

Gen. PHILLIPS. Yes, sir.

The CHAIRMAN. What is the maximum?

Gen. PHILLIPS. It begins at 16 and ends at 45, the military age.

The CHAIRMAN. How many ranges had you before the war?

Gen. PHILLIPS. We had 80 odd ranges in the country including the National Guard ranges.

The CHAIRMAN. And how many have you now?

Gen. PHILLIPS. We have practically that same number of ranges; that is, outdoor ranges. This number does not include the ranges that are installed at division cantonments, or those installed by rifle clubs. I am talking about the ranges that the Government has something to do with the maintenance of.

The CHAIRMAN. By "the Government" do you mean the United States or do you also mean the State governments and the municipal governments?

Gen. PHILLIPS. I mean the rifle ranges in which the United States has invested any money.

The CHAIRMAN. Well, are there any municipalities that furnish rifle ranges?

Gen. PHILLIPS. Yes, there are several; one principally down at San Antonio, Tex. They had a very good range down there and turned it over to the Army during the period that we were there. The Army monopolized it for some time after that, and the civilians could not get back on it.

The CHAIRMAN. How many people participated in this training last year?

Gen. PHILLIPS. We have enrolled now something in the neighborhood of 90,000 people in the rifle clubs of this country, which are actively engaged in rifle practice.

Mr. McKENZIE. Any rifle club which complies with the regulations laid down by the Secretary of War can utilize these various rifle ranges, as I understand it?

Gen. PHILLIPS. Yes, sir.

Mr. McKENZIE. And they are also used by the National Guard?

Gen. PHILLIPS. Yes, sir.

Mr. McKENZIE. And in fact, are public rifle ranges supported in part at least, if not wholly, by the Federal Government?

Gen. PHILLIPS. Your paragraph 113 of the national-defense act provided that all rifle ranges that were constructed in whole or in part at Government expense should be available for this use, and the War Department has just recently gotten out a circular—or rather

regulations—that control the use of those ranges. That has been published in the last two or three months. Regulations 109.

Mr. McKENZIE. Now, the rifle clubs, as I understand it, usually furnish their own ammunition, do they not?

Gen. PHILLIPS. No; the Government supplies that ammunition.

Mr. McKENZIE. To the rifle clubs?

Gen. PHILLIPS. Yes, sir.

Mr. McKENZIE. Without any expense at all?

Gen. PHILLIPS. Without any expense to the club within certain limits up to a certain amount for each man who takes the practice.

Mr. McKENZIE. What is the amount?

Gen. PHILLIPS. Three hundred rounds per man per annum.

Mr. McKENZIE. I notice in the language the word "instructors." How many instructors do you employ?

Gen. PHILLIPS. We have never employed any.

Mr. McKENZIE. You have men who are sufficiently trained to give the instruction without the employment of an instructor?

Gen. PHILLIPS. We have up to the present time; yes, sir. Now we propose this year, probably, to employ instructors at the small-arms firing school that will be conducted in connection with the national matches.

Mr. McKENZIE. Now, I notice that you ask here in the last paragraph of this appropriation that not to exceed the sum of \$100,000 may be used to participate in national rifle matches. Will you just explain that briefly in detail for the benefit of the record, where these national matches take place, and what are the elements of expense in connection with them?

The CHAIRMAN. That is page 44 at the top of the page.

Mr. McKENZIE. The last paragraph; if you will pardon me, if I understood you correctly, you said that you expended about \$80,000 of your \$100,000 last year in attendance on these matches.

Gen. PHILLIPS. We did. That left about \$20,000 for the other activities.

Gen. LORD. On March 24, the unallotted balance of this \$100,000 was \$22,752.12.

The CHAIRMAN. How much of that is obligated?

Gen. LORD. It was at that date unobligated.

Gen. PHILLIPS. I recently had the request to obligate some more to take care of transportation.

Gen. LORD. Since that date another obligation has been placed against it, as Gen. Phillips states.

The CHAIRMAN. Do you know what the amount of that additional obligation is?

Gen. PHILLIPS. I can not state how much it will amount to. They asked for \$25,000 additional but I believe that part of the first obligation is still available to take up a part of that. We will not exceed the \$100,000. This, Mr. McKenzie, is to insure that the entire appropriation is not used up for the national matches, and they can only use the amount mentioned if necessary.

Last year the Hawaiian team did not participate and some of the Western teams did not get in, which reduced expenses.

The CHAIRMAN. Do you have the competition at Camp Perry?

Gen. PHILLIPS. It will be at Camp Perry this year; it was at Caldwell, N. J., last year.

Mr. McKENZIE. Now, that is a competitive match for the members of the various rifle clubs from the different States of the Union, is it not?

Gen. PHILLIPS. These teams represent the different States, and our plan is to use the national match as an incentive to encourage rifle practice throughout the country. We desire that these teams be selected in the States by competition. That insures a general promotion of rifle practice throughout the State to select their team, and they take keen interest in making an effort to secure membership on the team that will represent their State at the match.

Mr. McKENZIE. The winning team having the right to participate in the national match?

Gen. PHILLIPS. The high men in that State, making up the State team. Now when they come to the national matches we do not presume that they know all about rifle practice. They are taken for the first two weeks and put through a school of instruction.

The CHAIRMAN. Where is that school of instruction? Is it in their own State?

Gen. PHILLIPS. No; it will be at Camp Perry during the first two weeks, and it is proposed this year to gather together all of the men who served as instructors at the Small Arms Firing School at Camp Perry during the war to act as instructors at this school. They are nearly all reserve officers now; and these men who represent the State and the teams that come from each of the R. O. T. C. training camps and any college teams will all be taken care of and put through a school of two weeks' intensive training in rifle practice, with no matches at all, and then the matches come on with the additional training they give. We give them that instruction and range management instruction so as to develop these men as instructors in rifle practice, not simply to have them there to compete one with the other and see which is the best shot but to give them the knowledge that will enable us to know that we have got a list of men that can be called upon at any time when we need them to serve as rifle instructors in case of emergency.

The CHAIRMAN. How many teams do you expect at the competition this year?

Gen. PHILLIPS. Well, we hope that we will get in the neighborhood of eighty teams this year.

The CHAIRMAN. How many men constitute a team?

Gen. PHILLIPS. There will be 18 men to the team.

The CHAIRMAN. Do they have substitute also?

Gen. PHILLIPS. Yes, sir; there are 12 men that fire in the team match. There are two substitutes and the team captain, the coach, the quartermaster, and the range officer. One man attending serves as a range officer.

Mr. McKENZIE. Those men get then a few weeks intensive training in all the science of rifle shooting, and then when they go back home of course they have that information to give to members of their local club?

Gen. PHILLIPS. Yes, sir.

Mr. McKENZIE. And in that way you get this knowledge disseminated throughout the country?

Gen. PHILLIPS. Yes, sir; that is our plan. And we congratulate ourselves in that we have had these national matches and developed

that kind of men prior to the World War, because they were the very best instructors we could get.

The Camp Perry school gave intensive instruction to 1,200 officers a month during a period of the war.

Mr. McKENZIE. Did you take any steps to keep any record of the marksmanship of the American soldiers in this war? Have you got any statistics that would give us any idea on that?

Gen. PHILLIPS. That would not come through me. That would come from The Adjutant General's office.

Mr. McKENZIE. I understand, but I thought perhaps your department, being so vitally interested in rifle shooting, might have some information along that line.

Gen. PHILLIPS. I do not know that they keep any record that would enable us to with any ease get at that. These reports come in from the different units, but I do not believe they have any plan of comparing them or coordinating them. I have tried a time or two to get a paragraph on your bill to create a director of marksmanship for the Army, and it has twice gone in in the Senate and gone out in conference.

Mr. McKENZIE. Isn't it true, however, that you do teach the man, in teaching this marksmanship, to have the individual man pick out his target and shoot at it?

Gen. PHILLIPS. No; shoot to hit it, Mr. McKENZIE. Our instructions are to shoot to hit, not at.

Mr. McKENZIE. And not just fire up in the air somewhere, and trust to luck that the bullet will hit something.

Gen. PHILLIPS. No, sir; that does not work.

Mr. McKENZIE. Well, what do you call that, direct firing?

Gen. PHILLIPS. That is individual direct firing.

The CHAIRMAN. Do you conduct your schools somewhat on the plan that is followed in Switzerland?

Gen. PHILLIPS. Yes, sir.

The CHAIRMAN. Of course, the rifle shooting there is universal. Everybody has to go to the rifle range and use so many cartridges. He is marked for the work he performs, and if he is not up to the mark he is liable to punishment?

Gen. PHILLIPS. Yes, sir.

The CHAIRMAN. Of course, we can not punish them here.

Gen. PHILLIPS. Ours is on the volunteer system. We give them the opportunity.

I will say for your State, sir, California is very active in that work now. All of your high schools are organized and engage in rifle practice, also a great many of your industrial plants and civic organizations.

The CHAIRMAN. My younger boy, who is a member of the high school cadets, told me not long ago that he engaged in rifle shooting for practice.

Mr. FIELDS. How many clubs have you in the country at this time, did you say?

Gen. PHILLIPS. We have about 2,300 clubs.

Mr. FIELDS. How widely distributed geographically are they? Have you figures on that?

Gen. PHILLIPS. There are more in the East.

Mr. FIELDS. Are there more in the East than the West, or are they distributed throughout the country?

Gen. PHILLIPS. They are throughout the country, but in New York, New Jersey, and Pennsylvania, and these States up here, there are more clubs than in any of the other States. The South seems to be the most backward in taking up the work.

Mr. FIELDS. I understood you to say a while ago that the Army had monopolized the range at San Antonio?

Gen. PHILLIPS. Yes, sir.

Mr. FIELDS. How did that happen, that it monopolized it entirely to the exclusion of the civil population after they turned it over to them? Wouldn't it create a better spirit if the civil population were permitted to use the range?

Gen. PHILLIPS. They claim that they needed it all of the time and could not allow time for the citizens to use it. Our great trouble has been in every war that we have been in lack of facilities for rifle instruction. In the building of cantonments for this war rifle ranges were the last things located and built.

Mr. FIELDS. But it seems to me in that instance and any other of similar character that it would create a very splendid spirit in the civil population for the Army to take them along where a fellow wanted to shoot with the military forces, and especially where the civil population has turned over their range to the Army.

Gen. PHILLIPS. That has been arranged for now. The regulations under which these ranges are operated provide for that.

Mr. FIELDS. To my mind it looks selfish of the Army not to do that, and I think it would create a bad feeling that ought not to exist.

Gen. PHILLIPS. That is what those young men down there thought.

Mr. FIELDS. I agree with them.

The CHAIRMAN. General, part of the sum is used for quartermaster supplies and services. What amount of the appropriation is used for that purpose?

Gen. PHILLIPS. It depends upon how much of it we can get. We have not been able to get enough of it heretofore to do anything of this kind.

The CHAIRMAN. What is the character of the quartermaster supplies that you desire to purchase?

Gen. PHILLIPS. The materials that might be put into the construction of rifle ranges and target butts. That is, if you could install concrete butts, the work done would be under the Quartermaster's Department. It is principally that.

The CHAIRMAN. How much of this appropriation of \$300,000 would be expended for quartermaster supplies, in case you got this amount of money?

Gen. PHILLIPS. There would be in the neighborhood of \$150,000.

The CHAIRMAN. About one-half of it.

Gen. PHILLIPS. About one-half of it for that. Another \$100,000 would be for the matches, and the other \$50,000 would be for necessary expenses connected with the promotion of the work.

Since this item was submitted, Col. Mumma, who was the commanding officer of the Camp Perry School during the war, and who has been designated as the executive officer for the national matches this year, submitted an amendment that follows the legislation that you reported in the reorganization bill, which provides for the trans-

portation and subsistence of members of State and the Reserve Officers' Training Corps teams. There is some difficulty in handling the matter of refunding transportation or furnishing transportation and subsisting the men en route. His amendment follows the legislation that you put in your reorganization bill and wanted it added as a provision after this \$100,000 paragraph.

The CHAIRMAN. Will you kindly furnish the reporter a copy of that amendment, to be inserted in the hearings as a part of your statement?

Gen. PHILLIPS. Yes; may I read it?

The CHAIRMAN. Yes.

Gen. PHILLIPS (reading):

Provided further. That the civilians designated shall be paid a sum equal to 5 cents per mile for the number of miles, over the shortest usually traveled route, from their point of departure, within the State which they represent, as designated in the order issued by the proper authority, to Camp Perry, Ohio, and return to the same point, said payment of 5 cents per mile being payment, in full, for transportation, subsistence, and other authorized expenditures.

In addition to the above payment, each designated civilian shall be furnished subsistence in kind, at the expense of the United States, at a cost not to exceed \$1.50 per day, or paid commutation of subsistence at the rate of \$1.50 per day, for the number of days actually in attendance at the small-arms firing school, from and including July 30, 1920, to and including August 31, 1920.

The CHAIRMAN. The committee will of course consider that in connection with the appropriation.

Gen. PHILLIPS. It makes the matter much easier for the quartermaster of the camp to handle.

The CHAIRMAN. Figuring it out on that basis, how much would you have to expend for attendance at this match at Camp Perry during the month of August?

Gen. PHILLIPS. This \$100,000 is the limit.

The CHAIRMAN. I understand, but do you expect to spend it all for that purpose?

Gen. PHILLIPS. If all of the teams that are authorized to attend will attend it will require that amount.

The CHAIRMAN. All right. Have you anything else?

Gen. LORD. Page 58, Mr. Chairman, is the next, ordnance equipment for rifle ranges for civilian instruction. On March 24 there was unobligated on the appropriation for the current year \$82,360, and there is also available a balance from 1917 of \$236,503.09.

The CHAIRMAN. Is that still available?

Gen. LORD. That is available until expended. That was under date of March 5.

The CHAIRMAN. Then in addition to that you are asking for \$200,000 in this bill, as against \$100,000 appropriated for the fiscal year 1920?

Gen. LORD. The unobligated balance of the current appropriation is \$82,360, and under date of March 4 there was available a balance of the 1917 appropriation for this purpose of \$236,503.09.

Mr. McKENZIE. What will become of that \$236,000? Won't that lapse into the Treasury?

Gen. LORD. No; that is available until expended.

Mr. McKENZIE. That makes over \$300,000 then that is available, does it not?

Gen. LORD. Yes, sir.

Mr. McKENZIE. Well, I would like to ask, that being true, is it necessary to make any appropriation?

Gen. PHILLIPS. It is only necessary to make an appropriation available in order to keep the wording in the act.

The CHAIRMAN. That could be \$100?

Gen. PHILLIPS. \$100; yes, sir.

Mr. GREENE. General, this will be the first attempt to resume civilian rifle practice since the war?

Gen. PHILLIPS. No. We attempted last year, but did not get enough money to do much.

Mr. GREENE. But this will be the first realization of the attempt?

Gen. PHILLIPS. Yes, sir.

Mr. GREENE. Have you already had any substantial, reliable, reports of the expenditure of the war to indicate what the opinion of military men may be as to the advantages of the former conduct of civilian rifle matches, and so forth, in its relation to the preparation for just such a thing as the war?

Gen. PHILLIPS. Yes, sir. I would like for you to call Gen. Malone before your committee and talk to him about that—Gen. Paul Malone. He has been before the Senate Military Committee, I think, on that very matter, and very strongly pointed out that the war was won in the last analysis by the accurate fire of our soldiers.

Mr. GREENE. I will preface my question by this suggestion—that nobody will hold in dispute, of course, the proposition that everything that properly and practically be made to contribute the efficiency in rifle fire is to be disregarded, and should be, on the other hand, encouraged. That is all right. We understand that, and we know that in the last analysis in war it is coming to grips with the infantry, and the superiority of rapid fire and morale and all that; but the question now is whether this method of encouraging civilian participation in target practice is found to be a practical one in leading up to just such desirable accomplishments as the war makes necessary.

Mr. PHILLIPS. Yes, sir. Take, for instance, the organization of a large army where the men have to be trained quickly. The men have to be trained in rifle practice individually. If you organize a division of 28,000 men, and you can find in that division 100 men who have been drafted from civil life and are instructors in rifle practice, you can detail them a man to each target firing point, and he takes these other men as they come through, just like they would go through a mill, and he can give them their individual instruction. That being one part of military training that must be individual.

Mr. GREENE. That is just what we are getting for the record, then. The public must not get the wrong impression that this civilian training in and of itself prepares masses of men so efficiently in marksmanship that they can step into the ranks; but rather that it breeds trainers?

Gen. PHILLIPS. Yes, sir; it develops trainers.

The CHAIRMAN. The general stated that all these men who come to the school and to the camp where they had the matches go back to their organization thoroughly trained to give further instruction. In other words, they are preparing instructors as much as anything else.

Mr. GREENE. Well, I was more anxious to overcome, if need be, the easily engendered popular misunderstanding that this was a misappropriation of money to develop individual marksmanship in the masses, and, of course, that is not it. The only question of doubt

about it that has ever been in my mind has been whether carrying off a contest was to the nth degree really made anything in the way of accomplishment for this country.

Mr. McKENZIE. I think my colleague, Mr. Greene, and I, fully agree on the statement that was made before you came in, by the general, that after all the marksmanship in the Army, whether large or small, depends wholly and absolutely on the skill of the individual soldier.

Mr. GREENE. Certainly.

Mr. McKENZIE. And this scheme, or, rather this plan, of training men, is only to train certain men who will go out and train others, and then in case of emergency we will have a number of trainers.

The CHAIRMAN. It will furnish instructors.

Mr. GREENE. That is the point I had in mind. I am quite agreed upon that. It was only the possibility that after all, the elements of the contest are more of a sportsmanlike kind than practical application to subsequent work of instruction.

Gen. PHILLIPS. They used to make it that, but since we have insisted on the establishment of a school of instruction in connection with the matches and that they have to take a course of instruction as though they were beginners before they enter into the matches at all, we get great value out of the annual meet.

MEDICAL CORPS.

Gen. LORD. Col. Wolfe and Col. Whitcomb, of the Medical Department, are here. This item is on page 45 of the bill.

STATEMENT OF COL. E. P. WOLFE, MEDICAL CORPS.

The CHAIRMAN. Colonel, the Medical Department items begin at page 45. The first item is Medical and Hospital Department. The committee will be very glad to hear you explain the necessity for this considerable increase over the amount allowed during the present fiscal year, which amount was \$4,500,000. I see that in the estimates for the fiscal year 1921 you are asking for \$6,714,000. Will you kindly explain that increase?

Col. WOLFE. If I might be permitted to call it to the attention of the chairman, a deficiency appropriation of a million and a half has been granted us.

The CHAIRMAN. In what deficiency bill was that contained?

Col. WOLFE. The last deficiency just passed, making our total appropriation \$6,000,000. The appropriation estimate that we submitted is based on the standing number of the Army at that time, as I remember it, of 570,000 men.

The CHAIRMAN. Five hundred and seventy-six thousand officers and men?

Col. WOLFE. Yes, sir. I believe for the current year we are estimating for a smaller number than last year.

Gen. LORD. I would state, Mr. Chairman, that the original estimate submitted for the strength of 576,000 men was \$12,015,849. That is to show the cut made.

The CHAIRMAN. That was the amount sent to the Secretary of War?

Gen. LORD. That was the amount that was originally submitted by the Surgeon General as his needs under that program.

The CHAIRMAN. And the Secretary of War reduced it to \$6,714,000. What is the basis of that estimate? For how many thousand men and officers are you providing?

Col. WOLFE. The same number. The original estimate included a great many projects which were omitted from the revised estimate; in other words, reducing it practically to absolute maintenance. The original estimate of \$12,000,000 included some equipment, but the estimate of \$6,714,000 was for little more than maintenance only. There was no new equipment, except such as might be necessary to replace equipment worn out or damaged or discarded during the fiscal year.

The great bulk of our expenditures at the present time is for civilian attendance, and that is brought about in two ways: First, for the current year we have had the necessity of providing many special types of treatment and of supplying a great deal of vocational or prevocational training to the men who are being treated; and then again the demobilization of the forces—that is, the draft forces—resulted in the obtaining by enlistment of men not of a caliber to handle the technical work which we have had to carry on at the hospitals. So that they were available to us for practically only police work. They were not capable of going into the ward and doing ward attendant's duty or going into the laboratory and doing the laboratory technician's duty, so that we have been obliged to hire civilians to do all this.

Mr. GREENE. Do you men in the Army Medical Corps, with the experience more or less common to hospitals and insane asylums, etc., find that there is a certain class of strollers who go about from one institution to another, generally being turned down after some little service, and who are more or less—well, I don't know what your personal estimate may be, but a layman soon finds out that they are rather irresponsible.

Col. WOLFE. I take it that you are referring to patients in that case?

Mr. GREENE. No; I am talking about the attendants.

Col. WOLFE. No, sir; we have had none of that, because we pick our attendants very carefully.

Mr. GREENE. You doubtless in your professional capacity in civil life, though, know that there is a certain sort of pseudo-professional class of hangers-on who go about these institutions, and they are rather notorious in connection with the insane asylums, and usually they are discharged after a little while, and frequently for abuse of patients.

Col. WOLFE. We have had no experience with that class of people in the military service.

Mr. GREENE. I am very glad of it.

Mr. McKENZIE. Haven't you had a good deal of trouble in the various hospitals with the enlisted men, growing out of the feeling of dissatisfaction at the high pay given to civilian employees in the institution who are doing practically the same work that you ask of the enlisted men?

Col. WOLFE. That was true; yes, sir; during the early part of the fiscal year when the highly qualified men of the draft period were still in the service; but since they have been demobilized we have not had that trouble, because the men who have come in to replace them could not handle the position that the other people handled and have not been assigned to such duties.

The CHAIRMAN. What do you pay for a civilian attendant in a hospital?

Col. WOLFE. I am afraid we do not have them just in the sense in which you are using that term, Mr. Chairman, because most of the work is done—that is, the ward control—is done by the nurse corps; but there are all kinds of specialists who are assisting the Nurse Corps in taking care of the sick. Those few that we have, which are classed as attendants, get a salary of \$540 a year, but they are only such men as would carry a slop pail, and assist in the hospitals.

Just as an example, we must have—although not a large number, but we must have a number of dieticians to supervise the diet of the patients, and not only of the patients, but also in a general way the whole hospital. Their base pay is \$60 a month, to which is added a certain sum in case they can not be taken care of in the hospital. In other words, if they have to board outside, their salary amounts to \$122.50 a month; if they live in the hospital, it costs us \$60 a month with allowances of rations in addition.

The CHAIRMAN. During the war you had quite a large number of such attendants?

Col. WOLFE. The records show that on March 26 we had 32 dieticians. These are the ones I am going to read to you now. We had 250 reconstruction aids for physiotherapy and 749 for educational therapy.

The CHAIRMAN. These attendants are not really a part of the Army Medical Corps?

Col. WOLFE. No, sir; none of them were.

The CHAIRMAN. And they were civilians?

Col. WOLFE. They are all civilians; yes, sir.

The CHAIRMAN. And that is what runs up our expense. They are now asking for legislation to include them in the Army so as to get the \$60 bonus that was paid to every enlisted man and woman in the military service.

Col. WOLFE. Yes, sir.

The CHAIRMAN. In your opinion, would their services warrant such an additional cost to the Government?

Col. WOLFE. Well my own private opinion is that it would not.

Mr. McKENZIE. May I ask you a question right there? Of course, the men right now in the hospitals are the officers and enlisted men who were wounded or contracted disease while in the service?

Col. WOLFE. Yes, sir; all in the service. Not necessarily in the Great War; not necessarily overseas, but all in the service.

Mr. McKENZIE. I understand. But the number coming from an ordinary peace time army, of course, would be very limited compared with the number that you have had coming from the great Army that took part in the war.

Col. WOLFE. Certainly.

Mr. McKENZIE. Now, do you have any idea that you will have anything like the number of officers and enlisted men in the military hospitals for the next fiscal year that you have had during the present fiscal year and have now? Won't the great majority of those men have reached the maximum of recovery and be discharged and go out of the hospitals?

Col. WOLFE. We anticipate that on the 1st of July there will be approximately 6,000 patients in the hospitals, the wreckage of the Great War. It may be reduced to 5,000, but certainly not lower than 5,000. It is possible that half or two-thirds of those will be discharged by the end of December, 1920, and the rest of them by the end of the fiscal year 1921.

It is a further noticeable fact that they are not as anxious to get out of the service now as they were six months ago. In other words, the actual rate of demobilization of patients lags considerably behind the anticipated rate.

The CHAIRMAN. What do you mean by that?

Col. WOLFE. There is not as much desire—

The CHAIRMAN (interposing). You mean Medical Corps men?

Col. WOLFE. No, sir; I am talking about patients now exclusively. They are satisfied with the treatment and want to stay until they receive the maximum amount of treatment which can be given in the Army.

The CHAIRMAN. Can you give the committee any idea of how many of the 206,000 wounded men are permanently crippled or disabled?

Col. WOLFE. I don't think I could give it to you right now, Mr. Chairman. I have the figures compiled, but I have mislaid them.

The CHAIRMAN. I have heard it stated that there are about 80,000 of those men who are permanently crippled.

Col. WOLFE. My estimate is that that is rather high.

The CHAIRMAN. I mean permanently crippled by the loss of a limb or the loss of an eye or some permanent injury of that kind. I wish you would kindly put that in the record.

Col. WOLFE. I will be glad to furnish the best information I can get on it.

Mr. GREENE. Can it be made more or less detailed, Colonel?

Col. WOLFE. Yes, sir.

The CHAIRMAN. And if you can also add to that those who are mentally affected, so that they will not again be in a condition that they were in prior to their entrance into the World War.

Col. WOLFE. I am afraid that would be very hard to give on the insane, because they recover sometimes after a considerable period. But I can give you the number that were discharged as incurable; that is, if we turned them over, we would have no hopes of giving them any further benefit.

The CHAIRMAN. If you will kindly put those figures into your hearing they will be very valuable.

(The matter referred to follows:)

	Due to battle injuries.	Due to injuries from other causes.	Total.
Amputation of:			
Arm.....	550	47	597
Elbow.....	21		21
Forearm.....	286	52	338
Wrist.....	28	3	31
Hand.....	275	92	367
Carpus.....	6	1	7
Metacarpus.....	161	51	212
Thumb.....	193	56	249
One or more fingers.....	1,355	716	2,071
Thigh.....	811	70	881
Leg.....	1,081	139	1,220
Knee.....	116	13	129
Ankle.....	41	5	46
Foot.....	208	93	301
Tarsus.....	40	15	55
Metatarsus.....	107	63	170
Great toe.....	53	48	101
Other toes.....	147	154	301
Blind, including partial as well as total (loss of one or both eyes).....			161
Grand total.....			7,253

Mental alienation (insanity).

	United States.		Europe.		Total.
	1917	1918	1917	1918	
General paralysis of the insane.....	26	161	2	31	220
Constitutional psychopathic states.....	472	2,161	3	617	3,253
Mental deficiency.....	1,564	9,413	32	742	11,751
Malingering ¹					
Dementia præcox.....	817	3,951	26	402	5,196
Psychasthenia.....	92	366	2	150	610
Psychoneurosis.....	233	3,212	4	3,855	7,304
Psychoses, alcoholic.....	139	211	5	76	431
Psychosis, manic depressive ¹					
Psychoses, others.....	586	2,270	14	1,425	4,295
Grand total.....					33,060

¹ Not tabulated as such, but included in "Psychoses, others."

Of the 1,120 cases admitted to St. Elizabeths Hospital, the following results were obtained:

	Re-main-ing.	Dis-charged.	Total.	Recov-ered.	Im-proved.	Unim-proved.	Died.	Not insane.	Total.
Enlisted.....	308	662	970	268	147	61	39	147	662
Officers.....	11	50	61	21	6	8	2	13	50
United States prisoners.....	40	34	74	12	3			19	34
Clerks.....	1	2	3	1	1				2
Nurses.....	2	10	12	3	2	2	1	2	10
Total.....	362	758	1,120	305	159	71	42	181	758

Of the 1,120 cases, 388 were overseas cases, of whom 103 had been in the active areas. The results obtained in these 388 cases are:

	Overseas.		In front line.	
	Remain- ing.	Dis- charged.	Remain- ing.	Dis- charged.
Enlisted men.....	120	243	33	60
Officers.....	6	12	2	7
Prisoners.....	3	1	1	
Clerks.....				
Nurses.....		3		
Total.....	129	259	36	67

The records of the other cases are not complete. The following cases remained under treatment March 15, 1920:

Psychoses.....	228
Epilepsy.....	21
Constitutional psychopathic.....	39
Psychoneurosis.....	122
Mental deficiency.....	34
Organic.....	9
Undiagnosed.....	98
Total.....	551

Mr. McKENZIE. You spoke about vocational training. How many people have you employed, or will you employ under this appropriation along those lines? Of course I had in mind that we want to do that thing, and we are appropriating money for the Vocational Educational Board, but of course as long as a man is in the hospital, an officer or soldier, he could go to one of those schools.

Col. WOLFE. I could give you that by tabulating what I have here. I haven't it tabulated on that particular basis. I have a list here of the total number of employees of all kinds which we would require, but I haven't it separated into that individual grouping of hospitals. You see we have to take care of hospitals and supply personnel in the department surgeons' offices and in camps, and I assume this coming year in medical supply depots; so that there are a great many places to be filled, and in order to give the information that you desire I would have to separate it out. I have it here, but not separated in that way.

Civilian employees engaged in physical reconstruction work.

Designation.	Yearly salary.	Number of employees.	Yearly cost.
General hospitals:			
Curative workshop instructors.....	\$2,700	1	\$2,700
Do.....	2,500	2	5,000
Do.....	2,400	10	24,000
Do.....	2,100	6	12,600
Do.....	2,000	1	2,000
Do.....	1,800	9	16,200
Do.....	1,680	2	3,360
Do.....	1,500	3	4,500
Reconstruction aids.....	600	716	429,600
Reconstruction aids (head).....	780	106	82,680
Reconstruction aids (supervising).....	1,800	7	12,600
Total.....		863	595,240

Civilian employees engaged in physical reconstruction work—Continued.

Designation.	Yearly salary.	Number of employees.	Yearly cost.
Base hospitals:			
Curative workshop instructor.....	\$2,500	1	\$2,500
Reconstruction aids.....	600	28	16,800
Reconstruction aids (head).....	780	4	3,120
Total.....		33	22,420
Other posts and stations: Reconstruction aides.....	600	5	3,000
Additional pay in lieu of rations and lodgings:			
General hospitals.....			523,500
Base hospitals.....			14,250
Other posts and stations.....			750
Total.....			538,500

RECAPITULATION.

	Number of employees.	Yearly cost.
General hospitals.....	83	\$523,500
Base hospitals.....	33	22,420
Other posts and stations.....	5	3,000
Additional pay in lieu of rations and lodgings.....		538,500
Grand total.....	901	1,159,160

Mr. McKENZIE. I am not criticizing you, but I had in mind that you might have more to do than you are doing now, because the discharged soldier would have the privilege of going to the military hospital and not require the Government of the United States to build a Public Health Service Hospital up alongside a military hospital. That is my view of it.

The CHAIRMAN. You called it "Pre-vocational" training. What do you mean by that?

Col. WOLFE. We use that term, Mr. Chairman, to differentiate between the instruction or training which is given to the man while he is in the service and that which is given by the Federal Board for Vocational Training after he gets out of the service.

The CHAIRMAN. Now, the Federal board as I understand it, has nothing to do with the men you are maintaining at the hospitals?

Col. WOLFE. No, sir; they do not do anything with the man until he is discharged from the military service, and so long as he is in the hospital he remains in the military service. He is not discharged from the service so long as there is any probability of improving his condition unless he asks for his discharge.

Mr. GREENE. How many dieticians did you say you have?

Col. WOLFE. There are 32 on the list.

Mr. GREENE. What is the disposition of them as to stations?

Col. WOLFE. They are all at the general hospitals.

Mr. GREENE. One at each hospital?

Col. WOLFE. No, sir; they vary up as high as 10 or 12 at some hospitals.

Mr. GREENE. Will you be kind enough, Colonel, to give the committee some information that will enable us to explain on the floor

what the purposes of those men may be and why more than one might be required at an institution?

Col. WOLFE. I shall be glad to place in the hearing a complete statement on that, but in a general way they determine the particular articles of food which each individual patient is to get. That is, if the attending surgeon prescribes a general diet covering a wide range of articles, the dietician figures out just how much of each individual article that patient is to have that day, to-day, to-morrow, the next day, and so on, in order to provide the proper amount of food to meet his requirements.

The Chairman. And the character of food.

Col. WOLFE. The character of food; yes, sir. Now, you see when it comes to doing that, one dietician can not cover the whole hospital.

Mr. GREENE. I should think not. It seems to me that the whole process—not with any disrespect toward the very healthy and proper attempt to cure, but the whole process is proceeding on that decentralization basis that has been outlined by Congress, and it seems to be growing more and more until we are getting to the point of who are the dieticians for the dieticians. That is what it really comes to.

Col. WOLFE. Well, the dietician naturally would be governed by the orders from the surgeon who has that particular ward.

Mr. GREENE. Now, when the attending physician prescribes the diet, I understand he inhibits certain classes of food?

Col. WOLFE. Yes, sir.

Mr. GREENE. And lays down, then, that it shall consist of the approved classes of food?

Col. WOLFE. Yes, sir.

Mr. GREENE. Now, has the practical experience in the medical profession actually demonstrated as essential the necessity for an expert whose sole province is to weigh in an apothecary's scale the amounts within that approved class of foods?

Col. WOLFE. I would say that, so far as my observation has gone—I haven't been out in the hospitals—but so far as my information has gone, they are one of the most valuable adjuncts to the hospital. It is not only necessary to provide the patient with something to eat, but it is necessary to provide him with something that will keep him satisfied and think he is getting something—keep his mind satisfied as well as give him the right things to eat.

Mr. GREENE. I realize, as every man does at our age, that not by any means the smallest part of medical treatment is the proper selection of food and quantities and all that sort of thing. That has become a very important thing. The question was, however, when you are doing business of this kind, whether a specialist was being so refined to such a degree that it was becoming more theoretical than practical.

Col. WOLFE. I would not think so, sir. I think that it is one of those necessary things that enter into the armamentarium of the surgeon or physician of these days.

Dietitians employed in the military service are women, all or nearly all of whom are college graduates. They may properly be called professional women as a high degree of training and education is necessary for them to master the principles of this profession. A fairly thorough knowledge, not only of organic chemistry, particularly food products, but of the physiology of digestion and assimila-

tion of food is necessary; also a thorough understanding of the theory of heat as applied to foods. Before this science of dietetics was developed the only method of determining whether a given diet was sufficiently nourishing or suitable for any particular patient was the empirical method of extended trial, but after physiologists had demonstrated that food could be measured by its calorific value and that this could be expressed in heat units, it was possible to establish a definite standard of food values.

It has been found that in order to sustain a human body at its maximum efficiency or to bring it to this point of efficiency after an illness, it is necessary that the diet be made up of the three principal classes in fairly definite proportions. These three classes are designated as carbohydrates, comprising all of the sugars and starches; the proteins or albumen foods derived mainly from meats, eggs, or the casein of milk, and the fats. Of the three classes the fats have by far the higher food value per pound or gram, and, in fact, more than twice that of the other two. In order that a diet may be sufficiently nourishing to enable the convalescent patient to gain strength and have the proper proportion of these three varieties of food, it is necessary for those who are selecting the diet for the convalescent patients to be familiar with the component parts of all the articles of food which are in common use and be able to determine the proper food value of all of these items. Such a careful supervision of the diet of well people is not necessary, since the appetite of the well person is a fairly safe guide when taken in connection with the gain or loss of weight. The importance of diet in the treatment of the sick—particularly those suffering from tuberculosis and some of the other chronic diseases—has been recognized only within the last few decades, and the success of the treatment of these chronic diseases depends much more upon the diet than upon their medical treatment.

The duties of the dietitians at our hospitals are outlined in circular letter No. 131, Surgeon General's Office, March 8, 1919, a copy of which is attached.

From the brief outline of their duties and what is expected of the dietitians it will be seen that, when they are required to inspect all of the meals that are served and supervise their preparation, one dietitian would not be able to give proper attention to more than 200 patients at the outside. The value of the dietitian is not entirely limited to the benefit derived by the patients, but any conscientious dietitian can save many times her salary; they are not only a necessity in a hospital, but the best investment that can be made in any hospital mess feeding 100 or more patients.

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, March 8, 1919.

CIRCULAR LETTER NO. 131.

Subject: Dietitians' service.

1. A consideration of the duties and status of dietitians in a number of military hospitals indicates the necessity for a general statement defining exactly the dietitian's place and duties. It is realized that any such general statement will be subject to modification when applied to individual hospitals.

2. *Relation of dietitian to hospital staff.*—The dietitian is responsible as far as her professional work is concerned to the commanding officer of the hospital. As assistant

to the mess officer, she cooperates with him and the chief nurse. The chief nurse of the hospital will send in a separate efficiency report of dietitians, monthly, basing this report not only on her own observations, but on those of the mess officer as well. Socially, the status of the dietitian should be that of nurses, and in matters of conduct she is under the authority of the chief nurse.

3. *Status*.—The dietitian is a civilian employee of the Medical Department. But to place a competent dietitian on the same basis with cooks and maids is an injustice to her and a disadvantage to the hospital in which she is working. Dietitians designated as head dietitians receive an additional \$5 per month. Dietitians performing the duties of head dietitians but not so designated should be recommended for such appointment.

4. *Duties*.—(a) Of the head dietitian: Reports to the chief nurse, or ward surgeon, deficiencies of service found in wards in order that these may be corrected through proper channels. Reports deficiencies of preparation and service found in the mess hall and kitchen, to the mess officer. Inspects serving of food in all the wards and has the responsibility of seeing that it is properly prepared. Supervises and assigns the work of her assistants. Is responsible for the planning of all patients' menus but confers with mess officer concerning market conditions before approving menus.

(b) Of the dietitians: Have immediate supervision of the preparation of food in the general patients' mess, sick officers' mess, and nurses' mess (if desired by commanding officer). They also have charge of the filling of the food carts. Have immediate supervision of general diet kitchen. Plan menus (these to be approved, however, before use by the head dietitian). Have direct responsibility for the preparation of diets and should be supplied with sufficient help to relieve them of the details of this preparation. Visit wards to confer with ward surgeons, nurses, and, in suitable cases, with patients regarding special diets.

5. *Equipment*.—The head dietitian should have an office provided with a desk, the office to be located in a quiet place near the mess department or diet kitchen.

6. The worth of the dietitian to the hospital is largely determined by the degree to which cooperative relations are established. Conferences at regular intervals, in which the commanding officer meets with the head dietitian, chief nurse, and mess officer are recommended.

By direction of the Surgeon General:

C. R. DARNALL,

Colonel, Medical Corps, United States Army, Executive Officer.

Copy to commanding officer, general, base, and port of embarkation hospitals; department surgeons and camp surgeons, certain post hospitals; surgeons, independent posts; Air Service.

Mr. GREENE. You can see from the layman's viewpoint, if he knew he could have a certain thing to eat and beside that another certain thing to eat, and so on, then outside of that he must not have things to eat, it would seem that some ordinary prudence and common sense on the part of the cooks, always being kept within the approved area, would probably supply the practical need.

Col. WOLFE. The principal thing is to see that the cooks provide the right thing.

The CHAIRMAN. And the cooks do not always follow the strict directions of the physician, do they?

Col. WOLFE. We have had a good deal of difficulty in getting the cooks to carry out the work of the dietitians.

The CHAIRMAN. Having been under a diet for 20 years myself, I have had those experiences in private life.

Mr. GREENE. I am not disputing the medical men, for that would be ridiculous and would stand me a bigger ass than I hope to be recognized, but I am only talking about the practical application of an approved theory to practical conditions. And I wondered whether there was not such administration in the hospitals, after the physicians has left his orders as could be sure that they would be obeyed,

even down to the cook, without having specialists to intervene constantly between each series of men.

Mr. McKENZIE. Now I would like to ask a question there. I presume these dietitians have to keep within the menu that is furnished by the hospital?

Col. WOLFE. The dietary of the hospital has a very wide range and there are many different substances which have the same food value and it permits almost of infinite variation so there is no sameness of diet.

Mr. FIELDS. I suppose if the dietitian would recommend some particular food that the hospital did not have, such as the welfare of the patient required, the hospital would attempt to get it, would it not?

Col. WOLFE. Yes, sir.

Mr. McKENZIE. Is it the duty of the dietitian to examine the food after it is cooked?

Col. WOLFE. That is part of it.

Mr. McKENZIE. Well, there has been more complaint come to my ears about the manner of serving the food than about the character of the food, from people in these hospitals, and I believe that instead of having so many dietitians, if they had some fellow there with a good strong arm to see that they cooked the food properly before they brought it up to a sick man, it would be a step forward.

Col. WOLFE. That is a matter of administration, and administration always, you are aware, depends upon the implements, or the instruments, or the personality with which the commanding officer of an organization has to work.

Mr. GREENE. That is what I have been trying to lead up to in my rather remote fashion. Why is it, if the physician leaves a certain prescribed diet which was nontechnical in character, the intermediate part of the administration running from the surgeon down to the kitchen can't see that the patient gets the diet?

Col. WOLFE. The patients received their diets all right before the dietitians were put in, but they did not get it with the same degree of satisfaction, nor the same degree of efficiency. When it is left to the cooks alone there is generally less variation in the diet than there would be if it were left to somebody to indicate how much of each individual kind of diet should be furnished.

Mr. GREENE. Is there such a thing in the system of administration in the hospitals after the attending surgeon has made this prescription, that is charged with seeing to the detail of its execution, or is some broad, generalized order left with anybody?

Col. WOLFE. So far as the ward itself is concerned, the nurse is generally in charge and the orders of the surgeon are carried out through such agencies as the nurse, the dietitians, and the ward attendant. A number of other individuals necessarily enter into carrying out of the orders. I do not hesitate to say that I have not served in a hospital that had dietitians.

Mr. GREENE. I don't want my questions to get a wrong impression. I am very anxious that the sick boy should have everything possible. We are looking only to the housekeeping end of it.

Col. WOLFE. The most that I can say about it, sir, is that it has been found a material advantage to have them.

The CHAIRMAN. As I recall it, there are only 32 dietitians, but there are some 500 of another class of special employees and 700 of still another class of special employees.

Col. WOLFE. So that the number of dietitians after all is comparatively small.

Mr. GREENE. I took it that is the first handle to the big job. It runs on and on.

Col. WOLFE. When you stop to remember that we have eight or nine hospitals in operation, 32 dietitians do not give very many for any hospital, and some of those hospitals have 2,500 patients, or did have.

The CHAIRMAN. Would you kindly put into the hearing the number of hospitals that you are operating to-day in this country, military hospitals?

Col. WOLFE. I have it right here.

The CHAIRMAN. And the number of patients at present in each hospital?

Col. WOLFE. Yes; I will do that.

The CHAIRMAN. Is that going to be a very large list, the list of hospitals?

Col. WOLFE. No, sir. I have before me a list of the large military stations where we have patients, and also a separate list of the general hospitals. I can give you either one or both.

The CHAIRMAN. If you will kindly put that into the record and show how many of the patients are hold overs from the World War we would like to have it.

Mr. MCKENZIE. Will that show the number of vacant beds?

Col. WOLFE. Yes, sir.

(The matter referred to follows:)

Patients in general hospitals Feb. 29, 1920.

	Overseas.	Domestic.	Total.	Vacant beds.
Army and Navy General Hospital, Hot Springs, Ark.....	13	16	29	97
General Hospital, Fort Bayard, N. Mex.....	95	270	365	318
Letterman General Hospital, San Francisco, Calif.....	484	586	1,040	187
Walter Reed General Hospital, Takoma Park, D. C.....	877	867	1,404	283
General Hospital No. 2, Fort McHenry, Md.....	723	248	971	753
General Hospital No. 6, Fort McPherson, Ga.....	304	464	768	27
General Hospital No. 19, Oteen, N. C.....	463	342	805	176
General Hospital No. 21, Denver, Colo.....	322	461	783	807
General Hospital No. 28, Fort Sheridan, Ill.....	1,446	434	1,980	983
General Hospital No. 31, Carlisle, Pa.....	531	44	575	125
General Hospital No. 41, Fox Hills, N. Y.....	843	178	1,016	434
Base Hospital, Fort Sam Houston, Tex.....	106	542	648	490
Total.....	6,207	3,977	10,184	4,380
Port of embarkation.....		31	31	23
Camp hospitals.....		2,447	2,447	1,643
Miscellaneous.....		953	953	1,265
Departments.....		2,131	2,131	6,086
Grand total.....	6,207	9,539	15,746	12,347

Mr. GREENE. One thing, Colonel, if I might suggest, that would help us when we come to debate this thing on the floor—very likely various men will have instances brought to their attention about hospital care, one thing and another, and there will be some discussion about it and we will be interrogated as to what we know about

the probabilities of the ensuing year—and if you could forecast some of that, as to the character of diseases under treatment, and the numbers, and what the probabilities were of lessening the number of beds as Mr. McKenzie suggests, that would enable us to answer intelligently a great variety of questions that we may expect.

Col. WOLFE. I have in this list here that I am turning over to the stenographer, complete data as regards the population at the place, the number of patients, the number of attendants, etc., all the way through; the number of beds available, the number of beds occupied, the number of beds vacant.

Mr. GREENE. Does that also give some attention to forecasting the next year's demands, results and demands?

Col. WOLFE. This does not. This is only a statement of facts.

Mr. GREENE. Would it be practical to, in some general terms, indicate what your expectations are?

The CHAIRMAN. I understood you to say, Colonel, that you expect to have half of these 5,000 patients out of the hospitals by the 31st of next December?

Col. WOLFE. Yes, sir.

From the beginning the geographical distribution of the sick with reference to the location of their homes has been carried out, general hospitals having been established in all parts of the United States in the most economical manner possible and at the same time situated as near as possible to rail communications and large population centers. Where these considerations have been departed from materially, it has been due to the fact that advantage was taken of Government-owned property upon which hospital accommodations were provided at low cost, the buildings from which if suitable, after the war, would remain for other military use.

Since May, 1919, the number of general hospitals has been reduced from time to time, due to the discharge of the sick and wounded as either cured or improved to the point of maximum benefit. The hospitals which are in operation now are not special hospitals, but are general with the possible exception of the hospitals for tuberculosis. However, in these general hospitals the specialties necessary are carried on. There has been no diminution in the quality of the work, though the quantity has decreased.

Complaints with reference to hospital service are immediately investigated and are dealt with openly and frankly. As a rule, the complaints are not directed against lack of proper care, of which there are comparatively few. There are more complaints alleging unsatisfactory food and messing service; also many complaints arise from an absence of a full knowledge on the part of the soldier or his friends as to his privileges for future treatment either in military hospitals or in hospitals under the administration of the Bureau of War Risk Insurance.

The prevailing character of disease and injury which now exists in our general hospitals is about as follows: With reference to disease, tuberculosis heads the list, and of these there are now remaining upward of 2,000 cases. Under the heading of "Injuries, old infected wounds, restoration operations, especially on the face and mouth, old bone injuries necessitating bone grafts and repeated operations, old amputations and artificial limb fitting both of arms and legs"—these conditions mainly predominate and will require considerable time for satisfactory result.

PROGRAM FOR THE FUTURE.

The hospital program for the future, of course, must needs fill the military program in so far as caring for the sick of the active Army, which may be authorized by Congress. However, scarcely more than 1 per cent of this Army will find its way into the general hospitals. Therefore, for an authorized standing Army of 300,000, general hospital space for 4,000 or less cases would be sufficient, but there remain many cases, the result of the war, which must be attended to to the point of maximum improvement, at which time they are discharged from the service completely cured or with certain disabilities. The latter class, if they so elect, are accepted by the Bureau of War Risk Insurance for further attention.

When the greatest number of sick and wounded had been returned from France and were under treatment in the United States there were 43 general hospitals, with

an average capacity of about 1,000 beds each. Since that time—the early summer of 1919—all but 12 of these institutions have been closed by reason of the discharge of patients. The hospitals which were not closed were selected to remain on the following considerations: Adequate care, economy in national wealth (personnel, money, and material), and location. These remaining hospitals average about 1,000 beds each, and are located, except in one instance, on Government-owned property, thus eliminating high rental, claims, etc. As far as possible, also, when reductions were made in the number of general hospitals, centers of population were considered, thus still catering as much as possible to geographical distribution with reference to the majority of the patients' homes. Over 150,000 sick and wounded were returned from France to the United States and have been treated in the general hospitals. There remain in general hospitals to-day 9,808 cases, of which 6,000 are so-called overseas cases and do not pertain to the reduced Army of to-day.

The accompanying blue-print chart, entitled "General hospitals," shows from January 2, 1918, to March 27, 1920, the capacity for patients in general hospitals and the number of patients in general hospitals by the week. A casual study of this chart for the period that has gone by enables us to make predictions as to the future. However, these predictions must be premised on the continuance of present policies, both in the Congress and in the War Department. Such a prediction in fact was made on June 30 last and was laid out on this chart, as shown by the yellow line. The yellow line indicates what at that time was believed to be the probable reduction in the capacity and sick in general hospitals in the United States. The prediction has not been far wrong. However, a prediction made to-day would probably be more conservative than that shown by the yellow line. Probably the green line, which has been inserted this date, can be followed as an enlightened guess with reference to the decrease in the number of sick in our general hospitals. It will be noted that the line stops at 4,000. Since there can be no reduction below that number, as that is the number of sick that will be normally present in the then remaining general hospitals for a permanent Army of an assumed strength of 300,000.

Of the 12 remaining general hospitals present to-day, five are to continue permanently for the use of the Army and seven are to be abandoned as the decline of patients warrants. Three will probably be abandoned before the middle of the coming summer. The general hospitals which are to be continued permanently are as follows: Walter Reed General Hospital; Letterman General Hospital; Army and Navy General Hospital, Hot Springs, Ark.; General Hospital No. 21, Denver, Colo.; and General Hospital No. 19, Oteen, N. C.; and of these five the first three existed as general hospitals prior to the war.

There are approximately 7,000 surgical cases now being treated in the general hospitals, the large majority of which are the remaining overseas cases. Of these, old suppurating wounds complicated by osteomyelitis (bone infection) constitute the majority. Lesions of the peripheral nerve, amputation cases, and maxillo-facial, mainly compose the others.

Up to March 1, 1920, there were 4,116 amputation cases cared for in the hospitals in the United States; 3,778 of these have been discharged on S. C. D. and are being cared for by the Bureau of War Risk. Of the total of 338 remaining in hospital on March 1, 248 had been fitted with their temporary artificial limbs and 90 remained to be fitted. The majority of these cases were cured when they left the hospital, were fitted with a temporary artificial limb which they had been trained to use, instructed in the care of the stump and in caring for their artificial limb. The permanent artificial limb is furnished by the Bureau of War Risk after a varying period which is required for the stump to shrink before accurate adjustment can be made. A limited number of these cases were discharged at their own request before they were entirely cured with the understanding that they would apply immediately to the Bureau of War Risk for further treatment. Amputation cases are being cared for at Walter Reed General Hospital, at Letterman General Hospital, at General Hospital No. 6, Fort McPherson, Ga., and at General Hospital No. 28, Fort Sheridan, Ill.

There have been approximately 4,000 cases of peripheral nerve injury admitted to the hospitals. Approximately one-fourth of these cases have been discharged. These are the cases which require the most prolonged hospitalization, the paralysis of the member being frequently associated with bone infection and operative interference can not be resorted to until the bone infection is entirely cleared up. It is estimated that 30 per cent of these cases will require treatment during the next fiscal year. The peripheral nerve cases are being cared for at Walter Reed General Hospital, Takoma Park, D. C.; Letterman General Hospital, San Francisco, Calif.; General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 28, Fort Sheridan, Ill.; General Hospital No. 41, Fox Hills, N. Y.; and Base Hospital, Fort Sam Houston, Tex.

Of the maxillo-facial cases there have been approximately 400 admitted to hospitals. There are at present remaining on hand about 200 of these cases, many of whom have been subjected to repeated operations for the most hideous deformities of the face and head resulting from gunshot wound. Remarkable results have been obtained. Practically none of these cases have been discharged before the maximum degree of improvement has been obtained. The maxillo-facial cases are being treated at Walter Reed General Hospital, Takoma Park, D. C.; Columbus Barracks, Ohio; and Jefferson Barracks, Mo.

The CHAIRMAN. And the remaining half out of the hospitals by the 1st of July, 1921.

Col. WOLFE. The best forecast we can make would be that; yes, sir.

Mr. GREENE. That very statement will lead to the question as to whether there are hospitals so evacuated to such an extent that there may be some process of centralization so as to relieve the Government, perhaps, of the upkeep and maintenance of some of those hospitals.

Col. WOLFE. As rapidly as the number of patients have decreased, the number of hospitals has decreased also. We started in at the beginning of the year, as I remember it, with 27 hospitals; we have 12 to-day, and we anticipate that 2 or 3, may be 4, of those will be out before June.

Mr. GREENE. Now, somebody may ask a question like this, for instance: In the attempt to centralize what is the general policy with regard to such patients as may still remain in any one of the hospitals that it is expected to close? Somebody will raise the question of humanity and the treatment of those folks and whether they ought to be moved or not, and so forth, and we ought to be prepared to answer that.

Col. WOLFE. None of them will be moved, who are not fit to be moved.

Further, for your information, when a hospital is being closed and it is impossible, or seems impossible, to transfer a patient—which has very seldom happened, by the way—arrangements are made with a local hospital to take care of them.

Mr. GREENE. That answers that.

Col. WOLFE. In that event, however, the probabilities are that they would be discharged by the military service and taken over by the Bureau of War Risk Insurance, but they would not be discharged until full arrangements had been made with the Bureau of War Risk Insurance to take them the minute we drop them.

The CHAIRMAN. Along that line, Colonel, I have had some letters from soldiers who were discharged from the military hospitals and put into Public Health hospitals. What was the reason for that change?

Col. WOLFE. The answer in general, not knowing the particular cases, would be that so far as we could foresee in the military service, they could not get any better. Under the working agreement that we started in at the beginning of 1919 such cases would normally be discharged from the Army into the Public Health or the War Risk Insurance control. So long as we can do them any good, if there be a chance for them to improve, they are not discharged unless they ask to be released.

The CHAIRMAN. As I recall, some of the letters that I have received are in the nature of a complaint that they were not desirous of continuing in the Public Health hospitals, but they were inclined to continue longer in the medical hospitals.

Col. WOLFE. Did such letters indicate that the writers had that opinion before they left the military hospital and went into the Public Health?

The CHAIRMAN. Well, I can not recall.

Col. WOLFE. May I suggest that a number of men have gone out because of the larger salary, the larger remuneration or compensation that comes to them when they are discharged from the military service and they go into the Public Health hospital?

The CHAIRMAN. I am speaking now of patients.

Col. WOLFE. Exactly, sir; but please remember that when a man is discharged and comes under the compensation of the War Risk Insurance Act, he gets \$80 a month; whereas in the military service he gets only \$30.

Mr. McKENZIE. That is, if he is a private?

Col. WOLFE. Yes, sir. That is where the difference comes in. He gets the same treatment—that is, he gets the treatment in the Public Health hospital under the Bureau of War Risk Insurance, but he also gets compensation of \$80 a month.

The CHAIRMAN. But then, why should a man who is put in that position complain of that?

Col. WOLFE. Human nature.

The CHAIRMAN. It is human nature to find fault.

Mr. McKENZIE. Isn't it true, however, that an officer for instance, of the grade of captain, who was in a military hospital and was discharged from the service and then went over to a Public Health hospital under the War Risk Bureau, would not receive as much compensation as he did while he was still holding his commission in the military hospital?

Col. WOLFE. Entirely so.

Mr. McKENZIE. Then he would have grounds for complaint.

Col. WOLFE. Under the compensation part of the Sweet Act I believe he gets \$80 the same as a private, whereas when he was in the military service, if he were a captain, he would get \$200 a month.

The CHAIRMAN. How about the treatment of venereal diseases now? Of course, when we entered the war and men were called in the draft, it was found, I think, under the first figures that were given to this committee, that 271 men in every thousand were afflicted with some form or other of venereal disease. What do you find to be the condition to-day?

Col. WOLFE. Well, the incidence of venereal disease in the Army is very low now. The last report was 50 per 1,000.

The CHAIRMAN. Fifty per thousand as against 271 when we got into the war?

Col. WOLFE. Yes, sir.

The CHAIRMAN. You do not discharge a man who has venereal disease until he is fully cured, do you?

Col. WOLFE. Not unless he be discharged under the same condition that the other man is, into a Public Health hospital. That, so far as I know, has not been done. When discharged, so far as it could be determined by all examinations, these men were not actively capable of transmitting any disease.

Mr. GREENE. It is unnecessary to suggest, Colonel, that this brings this whole question of medical treatment—this brings up a somewhat sensitive matter that we may expect to hear some testimony about on

the floor, and if in the preparation of this data, which is to be inserted in your hearing, you can anticipate some of those more or less popular charges and supply us the data that will enable us to answer the questions intelligently, it would be a great service.

Col. WOLFE. Would you suggest some heading?

Mr. GREENE. We have sketched it roughly now, but your long experience as a medical man will tell you where complaint is likely to come from, of course.

1. The incidence of venereal disease among men brought in by the draft was very greatly exaggerated. It was actually about 3 per cent among white men and about 20 per cent among negroes, as is shown in the reprints which are here available (Statistics of venereal diseases in the Army in 1918).

2. The incidence of venereal disease in the Army is now quite low and has for several weeks been in the neighborhood of 50 cases per 1,000 men per annum, a rate half of what prevailed in the Army in the United States for five years before the war.

3. Men are discharged from the Army before they are finally and completely cured of venereal disease, but this occurs infrequently and those infrequent instances are unavoidable for the following reasons:

(a) Venereal disease may last for years, despite treatment. During the demobilization period it was ordered that men should not be discharged until cured. Inasmuch as cure is not to be determined exactly in all cases, that was interpreted to mean apparent cure, freedom from infectious lesions; but men were warned as to the possibilities of recurrence, the danger of marriage, and the necessity, especially in cases of syphilis, for continuing treatment.

At that time it was possible to hold a man until he was apparently cured because he was in for the emergency, and it was the right of the Executive to determine when that emergency was ended. However, the present Army is composed of men who enlisted for definite periods; the enlistment paper is in effect a contract between each of these men and the Government. The lapse of time determines when the enlistment should terminate and the Government has contracted to free the man at that time.

If, when the time arrived, he had smallpox or diphtheria, there would be justification for holding him, because his discharge would constitute a menace to the public. The fact that he has venereal disease is not a similar justification, because his venereal disease does not constitute a menace to others except in the event that he misbehaves himself and voluntarily acts in violation of the law and against the public welfare. To hold him because of the existence of venereal disease would be to assume that he would so act, and it is not thought that the assumption that a man will misbehave is a sufficient reason to justify the Government in breaking its contract with him.

It is therefore the custom to discharge men with venereal disease when their enlistments expire, unless their physical condition is such that they could not properly care for themselves when discharged.

[Reprinted from the Military Surgeon for March, 1920.]

STATISTICS OF VENEREAL DISEASE IN THE ARMY OF THE UNITED STATES IN 1918.

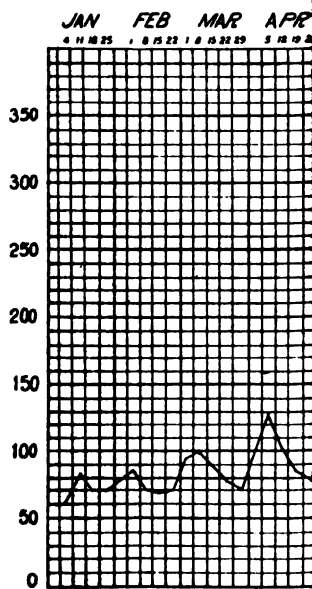
By Col. P. M. Ashburn, Medical Corps, United States Army.

[With two illustrations.]

1. The following basic facts upon which my computations and deductions are based are from the official sources indicated in the footnotes:

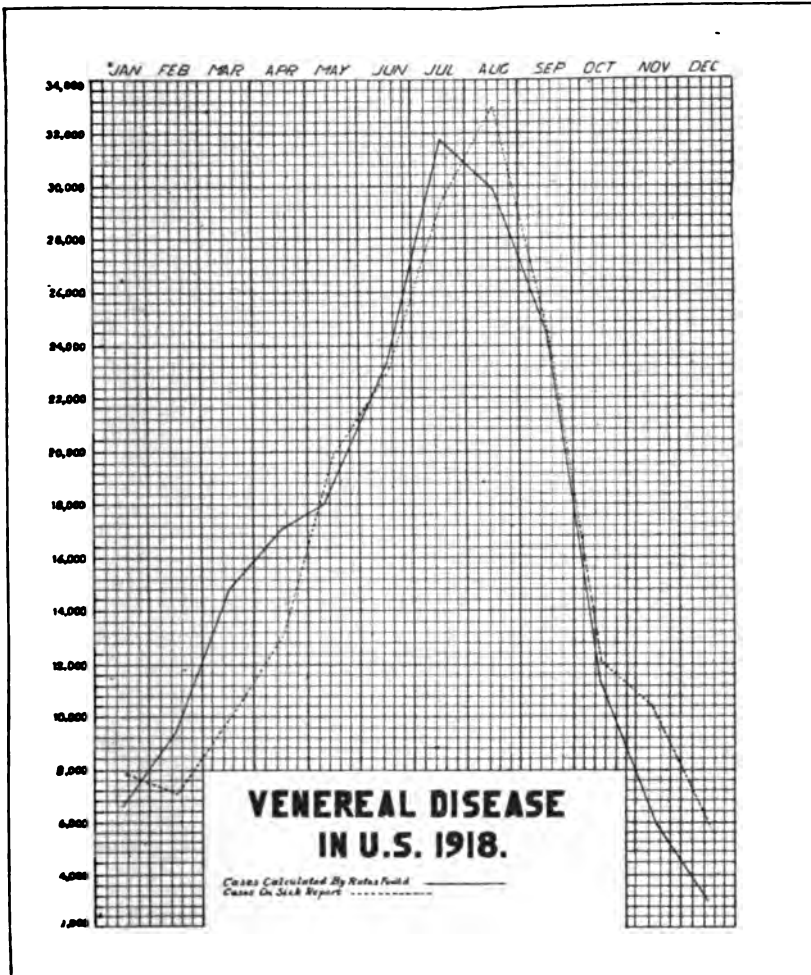
(a) Mean strength of army in United States.....	¹ 1,381,429
Mean strength of whites in United States, per cent.....	92
Mean strength of negroes in United States, per cent.....	8
(b) Total number of venereal cases in United States in 1918.....	² 196,008
Total number of venereal cases in whites.....	123,023
Total number of venereal cases in negroes.....	72,985

¹ Report of Surgeon General, 1919, Table 4, Vol. 1, p. 59. ² Idem., Table 516, p. 962.



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CHART No. 2.



(c) Increments—white:	
Draft to September.....	³ 1,697,673
Draft October and November.....	⁴ 127,283
Voluntary enlistments.....	⁵ 199,089
Total white increment.....	2,024,045
Negro:	
Draft to September.....	318,744
Draft October and November.....	⁶ 6,884
Enlistments negligible ⁵ and ⁴	
Total negro increment.....	325,628
Total white and colored increments.....	2,349,673

(d) Rate of venereal infection found in incoming men, 5.669 per cent.⁷ This rate applied to intake shows 133,203 cases introduced from civil life, which leaves 62,805 cases which were developed after enlistment.

(e) For five years (1912-1916) before the war the rates for white and colored troops stationed in the United States averaged 93 and 105 respectively per 1,000 men per annum.⁸

(Considering the great restrictions placed upon drink and prostitution within 5 and later 10 miles of camps in 1918, it seems fair to assume that the rates for new cases after entry into the service were equal for that year.

(f) The increment by months were as follows, so nearly as I can determine.

	White.	Colored.
January.....	64,513	
February.....	101,735	8,241
March.....	129,072	⁹ 28,680
April.....	164,177	⁹ 33,365
May.....	297,925	⁹ 682
June.....	288,975	41,549
July.....	348,416	71,759
August.....	209,826	83,797
September.....	193,153	50,451
October and November.....	127,283	6,804

³ Same as sources ³ and ⁴.

2. *Deductions.*—The incidence rate (62,805 cases in mean strength of 1,381,429) was 45.46 per 1,000 per annum.

Eight per cent of this was negro=5,024 negro cases developed in service.

Ninety-two per cent of this was white=57,781 white cases developed in service.

(One hundred and twenty-three thousand and twenty-three minus 57,781 equals 65,242 white cases brought in from civil life by 2,023,945 men, giving infection rate of 3.22 per cent.

Seventy-two thousand nine hundred and eighty-five minus 5,024 equals 67,961 negro cases brought in from civil life by 325,548 men, giving an infection rate of 20.87 per cent.

3. An attempt was made to avoid sending men with venereal disease to the American Expeditionary Forces. While not wholly successful, it was sufficiently so to eliminate from practical consideration the influence of introduced cases upon the incidence rate. No men were taken into the army after November 11, 1918, and from that date onward the United States rate should have been no more influenced by imported cases than was that of the American Expeditionary Forces.

The American Expeditionary Forces cases were reported upon a basis of inspections and involved little duplication.

The United States cases were reported as sick and probably contained more duplications, but the rates at home and abroad were probably not far apart.

4. There is appended hereto a chart showing the weekly reported incidence of venereal disease in the United States and the American Expeditionary Forces, the

¹ Table 20—Personnel Statistics Report A-14, Sept. 1, 1918. Statistics Branch, General Staff.

² Report of Surgeon General, 1919, Statistical Tables, Vol. I, Nativity Table, Table 1, p. II.

³ Second Report of Provost Marshal General, Table 79.

⁴ Same source as for white.

⁵ Statistical Division, Surgeon General's Office.

⁶ Reports of Surgeon General 1913 to 1917.

rates being expressed as annual rates per thousand men, figured on the basis of cases reported for each week shown. It is thought that the facts and deductions set forth above make this chart much more comprehensible than it is alone.

5. Chart No. 2 is submitted as proof of the correctness of my estimates. The solid line shows the calculated numbers of venereal cases for the various months. The broken line shows the cases actually placed on sick report. The discrepancies are thought to be explained fully by the constant and almost inevitable delay in getting cases on to sick report.

6. In 1918 there were enlisted in the Navy, the Naval Reserve and the Marine Corps 302,584 ⁸ men free from venereal disease, the venereal infections being cause for rejection from enlistment and actually causing the rejections ⁹ of 15.31 per thousand applicants for the Navy, 8.98 per thousand for the Naval Reserve and 6.16 per thousand for the Marine Corps. The very large majority of men so rejected were caught in the draft and taken into the Army, further increasing the infection rate therein. Only 1 per cent of naval enlistments were colored men.

7. *Conclusions.*—(a) The incidence rate of venereal disease developed after entry into the Army among men in the United States in 1918 was about 45 per 1,000 per annum.

(b) The proportion of Class A men (in the draft sense) between the ages of 21 and 31 years and of the white race who were found infected with venereal disease at the time of their entry into the service was (including naval and marine enlistments) less than 3 per cent.¹⁰

(c) The proportion of negroes of similar age and class so infected was above 20 per cent.¹⁰

Weekly report of venereal disease among troops in the United States for week ending Mar. 19, 1920.

Departments and independent stations.	New cases reported in week.	Strength of troops reported on.	Rate per 1,000 per annum.	Remarks.
Northeastern Department.....	5	5,267	49.3	1 station not reported.
Eastern Department.....	20	25,321	41.8	2 stations not reported.
Southeastern Department.....	30	18,689	83.4	
Central Department.....	31	25,712	62.6	
Southern Department.....	38	37,097	53.2	Do.
Western Department.....	6	11,674	26.7	1 station not reported.
Air Service.....	1	1,457	35.6	
Arsenals.....	10	2,929	177.5	Do.
Recruit depots.....	9	6,604	70.8	
Hospitals.....	11	11,441	49.9	2 stations not reported.
Ports of embarkation.....	0	1,397	0.0	
All others.....	6	9,053	34.4	Do.
Total.....	167	156,641	55.4	95.2 per cent of all stations in United States included in report.

NOTE.—All data obtained from weekly reports called for by G. O. 135, W. D., 1919. By direction of the Surgeon General:

P. M. ASHBURN,
Colonel, Medical Corps, United States Army,
Chief, Div. of Venereal Disease Control.

Mr. McKENZIE. Isn't it your understanding, Colonel, that in the case of the declaration of peace, within a certain specified time limit, all the temporary officers now in hospitals would have to be discharged?

Col. WOLF. It is my understanding, that under the terms of the act calling the troops into service, within four months following the proclamation of the treaty of peace, they all have to be demobilized.

⁸ Second Report of Provost Marshal General, Table 79.

⁹ Statement from office of Surgeon General of Navy.

¹⁰ In general these figures relate to disease detected by clinical examinations without the aid of routine Wassermann tests or similar diagnostic refinement.

I don't know whether there has been any amendment to take care of patients who are incapable of taking care of themselves, or whether that act could be construed otherwise than as imposing an absolute mandate to discharge them.

Mr. McKENZIE. Just one other question that will connect up with some of your testimony in connection with those exhibits.

How many, if any, of the hospitals operated by you or your department, are leased? And if you can put that into the hearing, showing the number owned and the number leased, I would be glad to have you do it.

Col. WOLFE. I think I can answer that in the main without deferring, if you desire.

Mr. McKENZIE. Very well.

Col. WOLFE. The hospital at Fort McHenry, Baltimore, was taken over from the Immigration Service. The hospital at Fox Hills, Staten Island, is on leased ground, but in Government buildings. The hospital at Oteen, N. C., is a Government-owned hospital.

The CHAIRMAN. There was a good deal of complaint about that Oteen hospital.

Col. WOLFE. Yes, sir.

The CHAIRMAN. Was an investigation made of the conditions there?

Col. WOLFE. Quite recently; yes, sir.

The CHAIRMAN. Were the complaints substantiated?

Col. WOLFE. I have not seen the inspector's report, Mr. Chairman. I do not know personally what the outcome of it was. The inspection has just been finished.

The CHAIRMAN. I received a great many telegrams at one time about the condition of that hospital.

Mr. DENT. So did I.

The CHAIRMAN. And I would like to have the information for the use of the committee, because we will probably be asked on the floor about it.

Col. WOLFE. If I may, I will have the Surgeon General transmit that to you.

The CHAIRMAN. Very well, that will be very helpful, I am sure.

Mr. DENT. Right in that connection, I have had a great many complaints about the hospital myself, and among other things I remember, if I recall correctly—it has been some time ago—an order was issued discharging men who were incurable, but those who had a prospect of being cured, they kept in the hospital. Is there anything in that?

Col. WOLFE. That is just in keeping with what I said a few minutes ago, that we keep a man under military medical attention so long as it is possible to do him any good; but if we can't do him any good, it was believed that the care of such a man should be chargeable against other funds than those of the Army.

Mr. DENT. Then he was not absolutely turned out to graze, so to speak?

Col. WOLFE. No, sir.

Mr. DENT. But he was turned over to the Public Health Service under the War Risk?

Col. WOLFE. Yes, sir.

Mr. DENT. I think that is quite important because I have had a great many complaints along that line.

Col. WOLFE. I think I can say to you that if a man is not incapacitated, if he can take care of himself, he is discharged and allowed to apply in person to the Bureau of War Risk Insurance; but if he be incapacitated so that he can not take care of himself, can not travel alone or anything of that sort, arrangements are made with the Bureau of War Risk Insurance for his admission to a hospital before anything is done for his discharge at the hospital in which he is being treated. Then, take it in the case of the insane—I am bringing this up as it is a concrete example—all the papers are made out for the man's discharge; he is sent with an attendant to the hospital to which he is to be admitted, and the moment he gets there and is signed for by the attendant of the other hospital, his discharge is effected.

Mr. DENT. But he is not absolutely turned adrift?

Col. WOLFE. No, sir; most assuredly not.

Mr. FIELDS. In effect, it is really a transfer from the military hospital to the Public Health hospital.

Col. WOLFE. Yes, sir; like a transfer of funds, you might say.

Mr. GREENE. That proceeds on the theory, then, that military appropriations are prospectively for keeping men in the service who will be of themselves of some service to it, and that when they reach the stage in which that money can not be appropriated with that anticipation, then they are transferred to what might be said to be the war relief or pension status?

Col. WOLFE. Yes, sir; exactly.

The CHAIRMAN. Will you kindly continue the naming of the other stations, that you were giving when we interrupted you?

Col. WOLFE. The hospital at Fort McPherson, Atlanta, is a military post, Government owned. The hospitals at Fort Sheridan, Ill., and the Army and Navy General Hospital, Hot Springs, Ark., are also Government owned institutions.

A fair number of patients are being treated in the hospital at Jefferson Barracks, Mo., which we have not listed here as a general hospital, and which is also a Government institution.

The hospital at Fort Sam Houston, Tex., is a military hospital—that is, it is Government owned.

The hospital at Denver, Colo., another tuberculosis hospital, No. 21, is Government owned.

The hospital at Fort Bayard, N. Mex., the original tuberculosis hospital, is also Government owned.

The hospital at Fort Bliss, Tex., which is taking care of purely border work, is Government owned. The same is true of the Letterman Hospital at San Francisco.

I came near forgetting the one at Carlisle, Pa., which is on a reservation transferred to us from the Indian Service. So that there is only one that is, strictly speaking, in any way leased, and that is No. 41, which is, as near as I can recall, a place where the land is leased, Fox Hills, Staten Island, but the buildings are owned by the Government.

The CHAIRMAN. How about Walter Reed, here in Washington?

Col. WOLFE. I forgot that. That is also Government owned entirely.

The CHAIRMAN. How many patients are out there, now?

Col. WOLFE. The report for March, 1919, shows 1,303 remaining. Fort Sheridan had 1,717; Fox Hills 1,015.

The CHAIRMAN. What has Letterman?

Col. WOLFE. Letterman has 775; Fort Bayard, 220; Hot Springs, 31; Fort McHenry, 991; Fort McPherson, 728; Oteen, 604; Carlisle, 486; Fort Sam Houston, 537; and Fort Bliss, 321. Those are the big hospitals.

Mr. McKENZIE. Is the Government taking care of the laundry at Walter Reed Hospital now?

Col. WOLFE. Yes, sir.

Mr. McKENZIE. There was a good deal of discussion about a year ago about that.

Col. WOLFE. All laundry—that is, all the laundry of all patients at all hospitals—is being taken care of by the Government, and recently steps are being taken to launder the linen and dry-clean the outer garments furnished by the Government for all enlisted men, well or ill.

Mr. GREENE. Colonel, this question is too broad probably to permit of a yes-or-no answer, or giving it very definitely just now, but naturally enough in the minds of folks here who are going to meet this appropriation probably from year to year there will be a desire to know approximately about how many men we can anticipate will eventually find their way into the War Risk Insurance provisions for maintenance or care as a result of the gradual evacuation of these hospitals, so that we can perhaps estimate in a sense about the standing annual appropriations on the average for those in the near future. Have you anything that is prepared that you can give us a very definite figure on that?

Col. WOLFE. I have not to-day; no, sir.

May I ask a question, in preparing this information for you, whether you refer to the wounded—that is, the casualties of the Great War, or to the continuing casualties which are going to occur in the existing army?

Mr. GREENE. No, not the peace time establishment; just what we may expect as the result of the war. Those who have been returned already from the hospitals and probably will soon find their way into that provision of law—just a rough estimate.

Col. WOLFE. I think that will be fairly well covered by the data that you desire regarding the number of wounded who are likely to become permanent charges.

Mr. GREENE. We have got that already?

Col. WOLFE. Yes; I will give that.

Discharged on surgeon's certificate of disability.

Apr. 6 to Dec. 31, 1917.....	15, 69
Leading causes:	
Tuberculosis.....	3, 676
Organic disease of the heart.....	1, 433
Pes planus.....	1, 394
Mental deficiency.....	1, 041
Epilepsy.....	655
Gonococcus infection.....	328

Jan. 1 to Dec. 31, 1918, battle traumatisms not included.....	115,373
Leading causes:	
Tuberculosis.....	10,293
Mental deficiency.....	8,251
Valvular heart disease.....	7,454
Gonococcus infection.....	6,358
Pes planus.....	5,791
Epilepsy.....	4,009
Jan. 1 to Feb. 29, 1920, including battle traumatisms:	
Ophthalmological.....	642
Oto-laryngological.....	622
Cardio-vascular.....	1,447
Neuro psychiatric.....	3,547
Tuberculosis.....	3,432
Orthopedic.....	5,037
General surgical and skin.....	3,140
Venereal.....	269
Miscellaneous.....	3,909
	<hr/> 22,045
Total discharges on surgeon's certificate of disability.....	153,117
Discharged at camps with disability, but not on surgeon's certificate of disability, not classified.....	166,089
	<hr/> 319,206

Total reported with disabilities..... 319,206

As a matter of interest and as showing the nature and classification of the disabilities of these 166,089 cases, may be cited the report of the examining board at Camp Dix, N. J., where a slightly greater number of men were demobilized than at any other camp. This board examined for demobilization 291,709 enlisted men and 22,846 officers, and referred to the board of review for estimating the degree of disability 21,147 enlisted men and 1,109 officers, a total of 22,256.

The number of classes of cases referred to the board of review were as follows:

Gunshot wounds of arms, 714; gunshot wounds of legs, 942; gunshot wounds of hands, 482; gunshot wounds of feet, 180; gunshot wounds of chest, 145; gunshot wounds of abdomen, 58; gunshot wounds of spine, 84; gunshot wounds of head and neck, 183; gunshot wounds of shoulder, 208; gunshot wounds and injury to eye (this includes all injuries to eye that caused the loss), 53; bronchitis, 1,021; pulmonary tuberculosis, 85; otitis media, chronic catarrhal, 535; hernia, ventral, 14; hernia, inguinal, 190; nephritis, 3.

Of this number, there were cases having 10 per cent and less than 25 per cent disability, 2,006; 25 per cent and less than 50 per cent disability, 487; 50 per cent and less than 75 per cent disability, 170; 75 per cent and over in disability, 24.

The CHAIRMAN. Colonel, I would like to have you put into the hearing the segregation of the amount, the total amount, so that you can cover, for instance, every item for the manufacture and purchase of medical and hospital supplies, including disinfectants, how much you want for that, and how much for transports, how much for laundry work, for enlisted men, for nurses, for patients in the hospitals, and supplies required; amount for mosquito destruction in and about the military posts in the Canal Zone—take the entire paragraph and segregate the amount into the smaller unit so that we can state to the House and to the committee just exactly what amount you are asking for each item. Can that be done?

Col. WOLFE. We had that originally prepared. I was confronted day before yesterday with the necessity of revising the requirement on an entirely different basis and I am a little confused to-day by trying to convert the one into the other.

The CHAIRMAN. Well, we had asked the War Department for a pay estimate on the basis of 175,000 men; also on 200,000 men; and also on 225,000 men. Now, would it be possible for you to segregate this \$6,000,000 total into subdivisions based on those three estimates of men—enlisted men?

Col. WOLFE. Yes, sir; we have already been doing some figuring on that.

The CHAIRMAN. Then I understand you will put that into the record?

Col. WOLFE. I will put that in; yes, sir.

Estimate of the requirements for Medical and Hospital Department, fiscal year 1921.

Item.	Strength.		
	175,000	200,000	225,000
Drugs, chemicals, and reagents.....	\$47,006	\$53,810	\$60,614
Surgical dressings.....	25,745	27,132	30,619
Surgical instruments.....	12,525	14,338	16,161
Laboratory.....	36,125	41,354	46,583
Dental.....	25,921	29,673	33,425
X-ray.....	47,480	54,364	61,238
Veterinary.....	7,157	8,193	9,229
Hospital furniture and equipment.....	192,825	220,322	248,259
Miscellaneous hospital supplies.....	18,473	21,147	23,821
Field equipment and supplies.....	18,909	21,646	24,383
Miscellaneous articles (impossible to estimate).....	53,734	61,511	69,288
Civilian personnel at general hospitals.....	1,516,410	1,526,410	1,536,410
Civilian personnel at base hospitals.....	68,130	68,130	68,130
Civilian personnel at supply depots.....	499,470	499,470	499,470
Civilian personnel at other posts and stations.....	298,000	304,175	319,350
Civilian, medical, veterinary, and dental attendance.....	120,000	120,000	120,000
Laundry.....	915,886	1,084,379	1,152,845
Salvarsan and other arsenicals.....	27,115	30,340	33,565
Biologicals and supplies for preparation of vaccines.....	20,000	22,000	24,000
Books, medical journals, and reprints.....	37,789	37,789	37,789
Supplies for occupational and physiotherapy.....	45,630	51,845	58,070
Orthopedic and prosthetic appliances.....	7,880	7,880	7,880
Printing and binding.....	2,500	2,500	2,500
Expressage.....	2,500	2,500	2,500
Gas and electricity for use in laboratories.....	2,500	2,500	2,500
Philippines.....	50,000	50,000	50,000
Panama.....	72,000	72,000	72,000
Hawaii.....	10,000	10,000	10,000
Germany.....	30,000	30,000	30,000
	4,200,000	4,425,000	4,650,000

[illegible]

Civilian employees, Medical Department, general hospitals—(continued.)

MAR. 26, 1920.

Designation.	Yearly salary.	Hot Springs, Ark.	Fort Bayard, N. Mex.	San Francisco, Calif.	Takoma Park, D. C.	No. 2, Fort McHenry, Md.	No. 6, Fort McPherson, Ga.	No. 19, Ottem, N. C.	No. 21, Denver, Colo.	No. 28, Fort Sheridan, Ill.	No. 31, Carlisle, Pa.	No. 41, Fort Hills, Staten Island.	Total number of employees.	Yearly cost.
SALARIES—continued.														
Waiters	\$360		2							5			7	\$2,520
Do.	420										1		1	420
Do.	480				12				11		1	8	32	15,360
Do.	600								13				13	12,480
Waitresses	600										1		1	720
Do.	720				7							4	11	7,920
Do.	960								1				1	960
Total employees		4	48	190	348	108	89	93	144	356	77	311	1,839	
Total salaries		\$2,700	\$33,520	\$106,100	\$210,440	\$118,400	\$61,400	\$65,120	\$124,900	\$193,160	\$53,860	\$174,800		\$1,141,460
WAGES.														
Artificial limb maker	1,800												5	\$9,000
Do.	2,000			1									3	6,000
Do.	2,100		2	2			2					1	2	4,200
Do.	2,600												3	7,800
Do.	2,700				3								2	5,400
Do.	2,700		2										2	5,400
Brace maker	2,100												1	2,100
Do.	2,400				1								2	4,800
Do.	2,400				2				1				1	5,500
Butcher	1,500												11	5,250
Do.	1,800		9				2						12	6,480
Do.	540	6	6										1	6,480
Do.	660										1		1	660
Do.	720		2				1						3	2,160
Do.	840			1									1	840
Laundry operatives	480		5	22	1			16					44	21,120
Do.	540		6	3							12		21	11,340
Do.	600							4					4	2,400
Do.	660												7	4,620
Do.	720		6	7								1	14	10,080
Do.	780												11	8,580
Do.	840												2	1,680
Do.	900		1	3									5	4,500
Do.	960		3	2				3					8	40,320
Do.	1,080		1	4				3				32	8	8,640

Additional pay in lieu of rations and lodgings at \$62.50 a month. February, 1920.

Stations.	Dietitians.	Laboratory technic.	Reconstruction aids.	Total number.	Yearly cost.
General hospitals:					
San Francisco, Calif.	5	2	94	101	\$75,750
Walter Reed, Takoma Park, D. C.	12		146	154	115,500
No. 2, Fort McHenry, Md.	5	2	106	113	84,750
No. 6, Fort McPherson, Ga.			4	4	3,000
No. 19, Oteen, N. C.			5	5	3,750
No. 21, Denver, Colo.			11	11	8,250
No. 28, Fort Sheridan, Ill.		1	186	187	140,250
No. 31, Carlisle, Pa.			2	2	1,500
No. 41, Fox Hills, N. Y.		2	144	146	109,500
Total.	22	7	698	723	542,250
Base hospitals: Fort Sam Houston, Tex.			19	19	14,250
Recruit depots: Columbus Barracks, Ohio.			1	1	750
Laboratories: Eastern Department, New York City.		2		2	1,500
RECAPITULATION.					
General hospitals.	22	7	698	723	542,250
Base hospitals.			19	19	14,250
Recruit depots.			1	1	750
Laboratories.		2		2	1,500
Grand total.	22	9	718	745	558,750

(1) Additional.

Civilian employees, base hospitals, as of Mar. 26, 1920.

Designation.	Yearly salary.	Fort Sam Houston, Tex.		Fort Bliss, Tex.	
		Number.	Amount.	Number.	Amount.
Salaries:					
Clerks.	\$1,000	5	\$5,000		
Do.	1,200			1	\$1,200
Cooks.	720	9	6,480		
Dietitians.	720	1	720		
Dietitians (head).	780	1	780		
Curative workshop instructors.	2,500	1	2,500		
Maids.	540	8	4,320		
Reconstruction aids.	600	28	16,800		
Reconstruction aids (head).	780	4	3,120		
Seamstress.	180	1	180		
Waiters.	480	3	1,440		
Wages: Laborers.	810	14	11,340		
Total.		75	52,680	1	1,200
Total salaries.					\$42,540
Total wages.					11,340
Additional pay in lieu of rations and lodgings.					14,250
Grand total.					68,130

Civilian employees, Medical Department at large, for fiscal year 1921.

Designation.	Num-ber.	Yearly salary.	Yearly cost.	Designation.	Num-ber.	Yearly salary.	Yearly cost.
Carotaker.....	1	\$300	\$300	Laborer.....	1	1,600	1,600
Carpenter.....	1	1,500	1,500	Do.....	1	1,350	1,350
Carpenters.....	3	1,400	4,200	Laborers.....	4	1,200	4,800
Carpenter.....	1	1,100	1,100	Do.....	40	1,100	44,000
Do.....	1	900	900	Do.....	38	1,000	38,000
Do.....	1	720	720	Do.....	82	900	73,800
Charwoman.....	1	480	480	Do.....	42	840	35,280
Do.....	1	360	360	Do.....	19	780	14,820
Checkers.....	5	1,200	6,000	Do.....	26	720	18,720
Chemists.....	2	1,800	3,600	Do.....	4	270	1,080
Clerk.....	1	2,000	2,000	Do.....	2	240	480
Clerks.....	2	1,800	3,600	Laborer.....	1	220	220
Do.....	6	1,600	9,600	Laborers.....	14	210	2,940
Do.....	12	1,400	16,800	Laborer.....	1	180	180
Do.....	50	1,200	60,000	Marker.....	1	900	900
Do.....	10	1,100	11,000	Messengers.....	4	600	2,400
Do.....	22	1,000	22,000	Packer.....	1	1,600	1,600
Do.....	28	900	25,200	Packers.....	5	1,400	7,000
Clerk.....	1	600	600	Do.....	46	1,000	46,000
Coopers.....	1	1,000	1,000	Repairer, typewriter.....	1	420	420
Elevator conductor.....	1	840	840	Warehouseman.....	1	1,400	1,400
Do.....	1	780	780	Watchmen.....	20	1,000	20,000
Firemen.....	6	1,200	7,200				490,470
Janitor.....	1	900	900				
Laboratory technician.....	1	1,800	1,800				

These employees will be required for duty at the medical supply depots at New York, Philadelphia, Washington, Atlanta, St. Louis, Chicago, San Antonio, and San Francisco; and at the reserve depots at South Schenectady, New Cumberland, and Columbus.

Total number of civilian employees, Medical Department, United States Army, as of Mar. 26, 1920.

Designation.	Num-ber.	Yearly salary.	Yearly cost.	Designation.	Num-ber.	Yearly salary.	Yearly cost.
Salaries:				Salaries—Continued.			
Attendant.....	9	5540	\$4,980	Dishwasher.....	3	480	1,440
Attendant (bath).....	1	600	600	Do.....	2	720	1,440
Attendant (X ray).....	1	1,200	1,200	Elevator conductor.....	2	720	1,440
Bacteriologist.....	1	1,800	1,800	Housekeeper.....	2	640	1,280
Bookkeeper.....	1	1,700	1,700	Do.....	1	720	720
Charwoman.....	3	540	1,620	Do.....	1	900	900
Chemist.....	3	1,200	3,600	Instructor (athletic).....	1	1,200	1,200
Clerks.....	8	720	5,760	Instructor (blacksmith).....	1	1,200	1,200
Do.....	62	1,000	62,000	Instructor (carpenter).....	1	1,200	1,200
Do.....	12	1,080	12,960	Instructor (sheet metal).....	1	1,200	1,200
Do.....	5	1,100	5,500	Instructor (farm).....	1	1,500	1,500
Do.....	98	1,200	117,600	Instructor (curative workshop).....	4	1,560	6,240
Do.....	4	1,300	5,200	Do.....	2	1,680	3,360
Do.....	7	1,400	9,800	Do.....	9	1,800	16,200
Do.....	2	1,600	3,200	Do.....	8	2,100	16,800
Do.....	3	1,800	5,400	Do.....	10	2,400	24,000
Cooks.....	1	300	300	Do.....	2	2,500	5,000
Do.....	4	360	1,440	Do.....	2	2,700	5,400
Do.....	9	480	4,320	Janitor.....	1	480	480
Do.....	7	540	3,780	Do.....	5	720	3,600
Do.....	10	600	6,000	Do.....	1	780	780
Do.....	1	660	660	Do.....	2	1,000	2,000
Do.....	34	720	24,480	Do.....	2	1,080	2,160
Do.....	4	780	3,120	Kitchen helper.....	2	420	840
Do.....	19	900	17,100	Do.....	10	960	9,600
Do.....	4	1,140	4,560	Laboratory technician.....	24	720	17,280
Do.....	18	1,200	21,600	Laboratory technician, head.....	5	900	4,500
Do.....	3	1,400	4,200	Maids.....	1	180	180
Do.....	26	1,500	39,000	Do.....	1	240	240
Do.....	5	1,600	8,000	Do.....	17	300	5,100
Dental hygienist.....	7	1,200	8,400	Do.....	36	360	12,960
Dental mechanic.....	1	1,440	1,440	Do.....	28	420	11,760
Do.....	1	1,800	1,800	Do.....	54	480	25,920
Do.....	2	2,400	4,800				
Dietitian.....	32	720	23,040				
Dietician, head.....	15	780	11,700				
Director, A. S. of N.....	2	900	1,800				

Total number of civilian employees, Medical Department, United States Army, as of Mar. 26, 1920—Continued.

Designation.	Num-ber.	Yearly salary.	Yearly cost.	Designation.	Num-ber.	Yearly salary.	Yearly cost.
Salaries—Continued.				Salaries—Continued.			
Maids.....	9	\$540	\$4,860	Seamstresses.....	2	\$540	\$1,080
Do.....	1	600	600	Do.....	6	600	3,600
Masseur.....	1	800	800	Do.....	2	900	1,800
Meat cutter.....	1	960	960	Sanitary engineer.....	1	1,200	1,200
Mess boy.....	1	660	660	Sanitary inspector.....	1	2,280	2,280
Messenger.....	4	480	1,920	Scrub women.....	1	420	420
Do.....	3	600	1,800	Scullery boy.....	1	600	600
Do.....	1	720	720	Scullery maid.....	1	600	600
Mess steward.....	1	2,400	2,400	Storekeeper.....	1	1,500	1,500
Mess stewardess.....	1	1,200	1,200	Telephone operators.....	2	720	1,440
Modeler (plaster).....	1	1,200	1,200	Do.....	1	840	840
Modeler (wax).....	1	1,800	1,800	Do.....	3	1,080	3,240
Nurse (student).....	542	180	97,560	Waiters.....	10	340	3,400
Nurse (war pris- oner).....	2	180	360	Do.....	1	420	420
Pantry man.....	1	1,200	1,200	Do.....	36	480	17,280
Pharmacist.....	1	1,200	1,200	Do.....	13	960	12,480
Photographer.....	1	1,700	1,700	Waitresses.....	1	264	264
Reconstruction aids.....	749	600	449,400	Do.....	2	360	720
Reconstruction aids, head.....	110	780	185,800	Do.....	1	420	420
Reconstruction aids, supervisors.....	7	1,800	12,600	Do.....	2	480	960
Sea nurses.....	1	144	144	Do.....	1	540	540
Do.....	2	180	360	Do.....	1	600	600
Do.....	1	420	420	Do.....	11	720	7,920
Do.....	3	480	1,440	Do.....	1	960	960
				Watchman.....	3	720	2,160
				Total.....	2,229		1,368,528

RECAPITULATION.

Civilian employees, Medical Department, United States Army, as of Mar. 26, 1920.

	Yearly cost.	Total.
Salaries:		
General hospitals.....	\$1,141,460	
Base hospitals.....	42,540	
Other posts and stations.....	184,528	
		\$1,368,528
Wages:		
General hospitals.....	215,780	
Base hospitals.....	11,340	
Other posts and stations.....	102,222	
		329,342
Additional pay in lieu of rations and lodgings:		
General hospitals.....	542,250	
Base hospitals.....	14,250	
Other posts and stations.....	2,250	
		558,750
Grand total.....		2,256,620
General hospitals:		
Salaries.....	1,141,460	
Wages.....	215,780	
Additional pay in lieu of rations and lodgings.....	542,250	
		1,899,490
Base hospitals:		
Salaries.....	42,540	
Wages.....	11,340	
Additional pay in lieu of rations and lodgings.....	14,250	
		68,130
Other posts and stations:		
Salaries.....	184,528	
Wages.....	102,222	
Additional pay in lieu of rations and lodgings.....	2,250	
		289,000
Grand total.....		2,256,620

Disbursements, Medical Department at large, civilian employees.

Stations.	July.	August.	September.	October.	November.
General hospitals.....	\$212,537.29	\$190,846.16	\$181,758.66	\$183,482.18	\$191,715.69
Camp hospitals.....	17,963.23	12,624.72	9,089.52	10,968.77	10,358.68
Depot surgeon's offices.....	4,396.57	4,678.32	4,960.29	5,266.56	4,964.98
Post hospitals.....	986.33	948.33	836.99	768.83	822.33
Recruit depots.....	1,377.83	960.33	854.16	851.53	1,159.00
Flying fields.....	535.00	339.33	385.00	348.67	324.50
Disciplinary barracks.....	196.00	153.84	136.00	136.70	136.00
Arsenals and proving grounds.....	101.33	114.90	95.00	47.50	75.00
Attending surgeon's office.....	2,277.50	1,576.67	2,060.00	1,426.67	1,360.00
Washington, D. C.....	1,979.31	2,137.31	2,063.30	2,062.76	2,211.64
Laboratories.....	1,004.16	688.33	598.33	873.33	873.33
Ports of embarkation.....	9,130.68	7,331.94	6,065.29	4,892.98	3,304.43
Base hospitals.....	16,129.85	13,772.82	12,623.35	11,661.61	11,302.16
Grand total.....	267,614.08	236,183.00	221,464.79	222,758.04	228,597.74

Stations.	December.	January.	February.	Total.
General hospitals.....	\$180,530.72	\$177,728.50	\$162,754.55	\$1,481,323.65
Camp hospitals.....	7,943.92	4,582.36	4,839.03	78,310.28
Depot surgeon's offices.....	4,909.01	4,622.07	4,204.54	38,001.34
Post hospitals.....	851.66	806.99	598.33	6,570.79
Recruit depots.....	1,141.64	1,112.50	817.50	8,294.49
Flying fields.....	300.00	261.32	220.00	2,713.82
Disciplinary barracks.....	151.70	202.68	210.26	1,722.07
Arsenals and proving grounds.....	75.00	75.00	88.32	673.05
Attending surgeon's office.....	1,360.00	1,364.00	1,380.00	12,794.84
Washington, D. C.....	2,186.08	2,244.97	2,288.50	17,163.87
Laboratories.....	859.99	598.33	598.33	6,074.13
Ports of embarkation.....	1,783.33	1,183.33	442.67	34,134.60
Base hospitals.....	9,576.63	7,722.62	6,420.56	88,200.60
Grand total.....	211,640.68	202,504.57	184,814.58	1,775,586.48

Grand total.....	\$1,775,586.48
Miscellaneous account (final pay vouchers):	
Base pay.....	\$65,067.82
Additional pay in lieu of rations and lodgings.....	20,296.43
	85,363.25
	1,860,939.73

Yearly cost of civilian pay rolls, based on the proposed abandonment of certain general hospitals.

Yearly cost, based on number of employees in service as of Mar. 26, 1920.. \$2,256,620

General hospitals to be discontinued:

On or about June 30, 1920—

For Bayard, N. Mex..... \$64,000

Fort McHenry, Md..... 200,150

\$264,150

On or about Dec. 31, 1920—

General Hospital No. 6, Fort McPherson, Ga. (reduced to post hospital).....

33,840

On or before March 31, 1921:

General Hospital No. 41, Fox Hills, Staten Island.... 85,090

Total to be deducted..... 383,080

383,080

Estimated cost of civilian pay roll for fiscal year 1921..... 1,873,540

Mr. McKENZIE. Colonel, I want to ask you a question on another matter pertinent to this paragraph, however.

Of course, you are aware that the reorganization bill that passed the House a few days ago and is now pending in the Senate provides for the giving of rank to nurses. Now, what I would like to know is whether or not in your judgment that will increase or tend to increase the expense of operating hospitals? In other words, will these head nurses who will be holding commissions feel that they have supervisory positions rather than that of nursing and it will compel you to employ additional nurses to take care of the patients?

Col. WOLFE. I have not seen the wording of the bill, so I can not refer to it exactly, but unless the bill provides for additional pay for the nurses the rank would not make any difference.

Mr. McKENZIE. It does not provide for additional pay.

The CHAIRMAN. It only fixes a little more definitely the responsibility of the nurse in regard to her superiors and in regard to what might be considered her subordinates. There has been a great deal of friction—I won't say a great deal—but some friction between nurses and the enlisted men on duty, the nurse being regarded as a civilian. The enlisted men don't pay quite the same respect to one of civilian status as they do to strictly military status of superior rank, and so far as I know that is the chief reason why this provision was included.

Mr. McKENZIE. That was one of the arguments made in its favor.

Col. WOLFE. I don't think it would increase expense.

Mr. McKENZIE. However, some of the nurses did not feel that it was necessary.

Mr. GREENE. What is the matter with the spirit of discipline in such a thing as an army that when an officer in competent authority gives a competent order and requires the subordinate to execute it, he may plead as a reason for disobedience the channel through which the order came? How does the intervention of a civilian who is there specially for the purpose and is a civilian himself, or herself, directly under the administration—how does that person simply interrupt the channel of authority between the superior and the subordinate? And if it does, why isn't it corrected?

Col. WOLFE. When the order is from a superior officer to a subordinate it doesn't make any difference about the channel through which it goes, but when that channel undertakes on its own volition to issue other instructions which are the natural outgrowth of the original order, there is where the trouble comes.

Mr. FIELDS. And which at times are absolutely necessary?

Col. WOLFE. Yes, sir. In other words, if I as a surgeon direct an enlisted man to do something by giving a nurse instructions to tell him to do so and so, and he disobeys the order, then he is liable to punishment; but if I tell the nurse to take such and such care of a patient, and in the carrying out of that duty she tells the enlisted man to do such and such a thing about that patient, that is not a violation of my orders.

Mr. GREENE. I understand that is a technical refinement, and of course a strict one, but isn't it possible with the wonderful discipline which the Army has received in other directions, to train the enlisted man to take such instructions from the intervening civilian as are intelligently pursued or given to him from a superior?

Col. WOLFE. I think in the main they have, but there is that undercurrent of—"well, you are not in the military service; you are a civilian," and there is that kind of friction. I can't express it exactly, but perhaps you can appreciate it.

Mr. GREENE. Now it seems to me that is the only instance in which the want of military authority or the dignity of rank interferes with the discipline of the Army. We can go right out to any post this minute and find the rawest rookie who is number three on guard that day and he will halt any major general in the service.

Col. WOLFE. Yes, sir.

Mr. GREENE. And the major general will stand back, too, because he knows there is a case where rank doesn't make any difference. If the sentinel is acting under orders that is enough for anybody in the Army.

Col. WOLFE. Yes; but he has certain orders, and the other people know what his orders are.

Mr. GREENE. They may or may not, but they respect the authority until they find out he is over reaching it.

Col. WOLFE. If that sentinel should give orders which are not in keeping with his position somebody would get into trouble.

Mr. GREENE. Yes; but they disobey those orders at their own peril, because he is there by lawful authority and presumed to be doing nothing but lawful acts, and if they try to run by him, they do it at their own peril.

Now, then, here is the case where explicit directions being laid down in the hospital for certain people to perform certain things, I, for the life of me, can not understand why the channel through which the order comes even the supplementary instructions for the purpose of carrying that order out, can be held in dispute by anybody to whom the order properly falls. It seems to me there is something wrong with discipline somewhere.

Col. WOLFE. Well, you know when we get grown up, we don't like to take orders from women very much.

Mr. GREENE. I agree with you there. That is the attitude I took in opposing that proposal for rank for nurses.

The CHAIRMAN. Probably it was in order to avoid any contingencies of that kind and to prevent them in the Army, that it was deemed advisable to give the nurses relative rank.

Col. WOLFE. I think that was the chief reason.

Mr. McKENZIE. Having given these nurses rank to carry out the purpose which you have just stated, in your judgment do you think the court-martial trials will increase in number?

Col. WOLFE. I would not think so; no, sir.

Mr. McKENZIE. You would not think so. Do you think they will submit to the orders of the nurses without any complaint and therefore will not be guilty of disobedience to a superior officer?

Col. WOLFE. I would be inclined to think there would be a little less friction than there is now. It is an experiment that will have to be tried.

The CHAIRMAN. Is there any other question on that item? If not, we will proceed to the next item on page 47, "Hospital care, Canal Zone garrisons."

Gen. LORD. Before leaving that, Mr. Chairman, let me put in the record the unobligated balance under this appropriation, medical and hospital department. Under date of March 24 it was \$332,378.79.

The CHAIRMAN. That was unobligated?

Gen. LORD. Unobligated, at that date. There may have been something gone through since, but it shows that they pretty well used up their appropriation.

The CHAIRMAN. And, of course, I understood the Colonel to say, that you got a million and a half deficiency for this purpose.

Gen. LORD. In connection with the laundry work in the memorandum from the Surgeon General, it was suggested that the provision in line 20, the beginning of line 20 of this page and ending with the comma in line 21, page 45, be eliminated, as it was unnecessary, as they had sufficient authority under the law without that to perform the laundry work. But I don't know that that does any particular damage.

Col. WOLFE. It occurs twice in the same bill in the same appropriation, and it seems unnecessary.

The CHAIRMAN. Well, of course, you remember that that was put in because the enlisted men were being charged for their laundry work, and as I now recall the circumstances the item was inserted in an amendment offered on the floor.

Mr. GREENE. Uncle Joe Cannon made it.

The CHAIRMAN. Yes; and I don't think we had better try to change the language at this time, because if the Army reorganization bill goes through Congress it will probably be necessary to change the language of many of these paragraphs; and then the changes can all be made at one time without precipitating a row on the floor.

Gen. LORD. On page 46 of this same paragraph there is an "s" missing in line 18, after the "nurse." The correct law reads "female nurses." That is line 18, "for the pay of male and female nurse."

The CHAIRMAN. It should be "nurses."

Gen. LORD. The "s" should be inserted; yes, sir.

The CHAIRMAN. Of course, the nurse corps, female, is provided for under the pay of the Army in another paragraph.

Col. WOLFE. But we have to hire many nurses that do not come under the Army.

The CHAIRMAN. Are not a part of the Army?

Col. WOLFE. Before we pass to the next item, may I say a few words more on this appropriation?

The CHAIRMAN. Certainly.

Col. WOLFE. When you receive my estimate you will find that the expenses for services will be considerably in excess of the estimate for supplies, and in order that you may be advised fully why this is so, I want to emphasize something which I have said before.

The class of enlisted personnel that we are getting in the Medical Corps at the present time is not capable of doing the work that the men that we had before the war were doing, because they have not had the training and they are for the most part one-year enlistments only. They will go out next spring, just as they were enlisted this last spring, and that will call for the enlistment of other untrained men who are not qualified to perform these technical duties which have to be carried on in connection with a hospital. So that our expense for civilian employees will not diminish in the ratio which you would

normally expect it to, because there is nobody to take their places, and I ask you to give this due weight when that comes before you.

The CHAIRMAN. Now, I would like to ask you right in connection with that—these one-year enlisted men who entered the Medical Corps of the service, you are training them, I take it, in their duties?

Col. WOLFE. Yes, sir.

The CHAIRMAN. When they go out of the Army, have they acquired a training in that branch of the service that will make them more efficient and enable them to earn larger pay than they would have been able to earn in their former occupations?

Col. WOLFE. It has been our effort to train them along the lines of their duties as hospital men—various duties about a hospital. We have not attempted to any great extent to take up the other lines of vocational training. We needed the men so much; we believed that their coming into the Medical Service indicated a desire on their part to qualify or get an education along that line, and we have given them as much of the medical training as it was possible to do in the period of their service. In addition to strictly military medical training they are being given, wherever they will accept it, educational work to qualify them—that is, school work—

The CHAIRMAN (interposing). What I have in mind is this: All over this country the prominent leading physicians in the larger cities have a corps of trained nurses which they assign to cases when the need of a nurse becomes evident. Now, do many of these men who are trained in the Army Medical Corps go into that kind of service when they leave the Army, and do they not obtain very much better pay in that way than they would have been able to earn following their former vocations?

Col. WOLFE. They certainly would if they go into that particular line. If a man leaves and goes into some other line of activities, as some of them do, entirely at variance with the training they get in connection with the care and treatment of the sick, of course they are not benefitted by the military service in so far as that technical training is concerned, but if they care to continue in the kind of work that they are being trained in, while they are engaged in the care of the sick, they would naturally be very greatly benefitted by it.

There is another thing which will come up. We would have to pay considerably higher, larger sums, for civilian medical attendance, that is for the services of civil physicians, dentists, and veterinarians, than we did before the war, due to the establishment of the Reserve Officers' Training Corps, and because of the wide distribution of military personnel at places where we have not medical officers to give attendance, and where they must depend on the local civilian physician for such medical treatment as they may require. Those people get their treatment locally, and the bills for such treatment, whether it be physician, nurse, or hospital, are paid out of this appropriation. This will probably be increased during the coming year as it has been during this year, by reason of some 600 different stations, as nearly as I can recall it, where these small units of officers and men are distributed as training agents for the schools.

The CHAIRMAN. In that very connection will it be possible to secure the services of men who were in the medical corps in this war and who have passed into the reserves?

Col. WOLFE. I think that in many cases they are giving the treatment, not as officers, but as private physicians.

The CHAIRMAN. I understand, of course, they are no longer in the Army?

Col. WOLFE. I have a very concrete illustration of that kind that happened at Fort Collins, Colo. The training unit at that university is getting its medical attendance from men who were medical officers and who served overseas during the war. I have no doubt that the same condition obtains at every place where they find a local physician who has served in the war.

Mr. MCKENZIE. I am considerably interested in your statement about the large number of civilian employees that it was found necessary to take into the service, due to the fact that you had not obtained men in the enlisted personnel, yet, of course—and I say this with all due respect to the Medical Corps—the duties of a Medical Corps are very largely civilian, and it strikes me that if experience had demonstrated that it is necessary to go outside and hire so many civilian employees, that we could very probably in the reorganization bill cut down the number of men that we provided for the enlisted strength of the Medical Corps. In other words, it does not seem to me that it would be necessary to have a corps of enlisted men sufficiently large to perform all the duties of the corps in peace times, and then, in addition to that, to go outside and hire hundreds of men to come in and do the work which we naturally expected would be done by the enlisted personnel.

Col. WOLFE. Under normal conditions it would not be necessary, sir, but these conditions are abnormal. This is a sort of temporary measure in order to tide over until this personnel can be trained. I think it most desirable and necessary to train as many men as possible in the care and treatment of sick and wounded and in the administration and service of hospitals in time of peace that they may be available for like purposes in stress of war or other great emergency. The number of enlisted men in the Medical Department should not be reduced, since the bulk of them are with troops and not at hospitals.

Mr. MCKENZIE. Did I understand you, Colonel, to say that you had some fear that the time that would be necessary to continue these civilian employees was a very indefinite and uncertain fact, and that you had no hope—you did not use just those words—but you had no hope that we could get rid of them in the very near future?

Col. WOLFE. I think that would be very likely the case during the fiscal year 1921, for the reason which I have stated, that all the enlisted personnel now in the Medical Corps are one-year men, who will be discharged next spring. Whether they are trained or not, they go out of the service, and when the next group of untrained men comes in we are back just where we started with people who have no experience, no knowledge as to how to do this work.

The CHAIRMAN. About how long does it take you to train a man for the Medical Corps?

Col. WOLFE. In the old days we used to think it took two years.

The CHAIRMAN. What has been your experience?

Col. WOLFE. The men of the draft, I think, acquired it within six months, but it depends altogether on a man's previous training, his education, his aptitude. If the man is not qualified—that is, if he is a little bit below what you commonly take as the standard—he can not learn it nearly so quickly.

Mr. GREENE. If he is below that standard, he is probably not likely to be a desirable man to retain, is he?

Col. WOLFE. I would not say that was necessarily true, sir, because of the youth of a great many of these men who are in this one-year enlistment. They are too young to have reached such a stage of maturity where they might well be charged with positions of responsibility.

Mr. GREENE. You found, then, that during the war either the patriotic intention which led to volunteering, or the same character of men of ability being called into the draft, this gave you a more rich field to draw this service from, although the men were in the enlisted rank?

Col. WOLFE. Yes, sir. The selective service feature of the draft gave us access to men with training along the lines we needed.

Mr. GREENE. And you had a higher average of capacity, experience, maturity, and office skill among the men that would be serving in a grade and under pay that the same men would not take in peace times?

Col. WOLFE. Decidedly.

Mr. GREENE. And that leads to the trouble now, does it not?

Col. WOLFE. Yes, sir. All the trained men we had prior to the war have gone out; many of them have become commissioned officers.

Mr. FIELDS. You found, then, that a mature man is a better man than an immature man; is that the experience?

Col. WOLFE. A man to be in a position of responsibility at a hospital should have reached somewhere in the neighborhood of 25 years. Take a young man of 18; his intentions may be of the best, but I think that nobody would trust him with a position requiring great judgment.

Mr. GREENE. Does not this thing hold true, not only as to the aftermath of the war, but is it not a probability to reckon on right along, that you can not get for the minimum pay or the maximum pay of enlisted grades the kind of men of maturity, skill, experience, judgment, and all the rest of it, that are really necessary for these places, and that you can not hereafter expect to equal that character of service that you did get in war times in most grades?

Col. WOLFE. For quick expansion, yes, sir, that is true; but where you can get the men and train them for years, as it was possible in prewar times, you can develop your men to a fair state of efficiency.

Mr. GREENE. I have that in mind, but I was wondering whether that kind of man would be likely to enlist in the Medical Corps in times of peace?

Col. WOLFE. I am only talking from what happened in time of peace, before the war.

Mr. GREENE. You were able to get them then?

Col. WOLFE. We got a number of men, and for various reasons. Oftentimes college men came into the service, for one reason or another, for a three years' enlistment; and, finding it was not a bad place to be, continued on in the service.

Mr. GREENE. Would you not expect that a man who had the exceptional qualifications that would lead to his promotion would rather avoid military service, inasmuch as there would not be much chance for promotion in it?

Col. WOLFE. That is very true, and yet at the same time, by continued study and application in the service, even unpromising material has, previous to the war, developed into fairly good material.

It takes time to do it, and the point I am making here is that we have not time, in the short space of time that is allowed us, to train the type of man who has come in up to the state of efficiency where he can do the work.

The CHAIRMAN. Colonel, is there anything else on that paragraph that you want to explain? If not, we will go to the next item, "Hospital care, Canal Zone garrisons," on page 47. You increase that item, I see, in your estimates by \$10,000.

Col. WOLFE. We have also had about 25 per cent increase in hospital charges.

The CHAIRMAN. What do you mean by that?

Col. WOLFE. In other words, that the cost per patient per day in the hospitals of the Canal Zone has been increased approximately 25 per cent. It is still reasonable, but it has been increased about 25 per cent, so that with the decrease of the garrisons it was still necessary to add a sum of money to meet the requirements. I have no information as to the status of the appropriation and of the disbursements under the previous appropriation.

The CHAIRMAN. These sums are paid to the Panama Canal?

Col. WOLFE. To the hospitals which are in the Panama Canal Zone, belonging to the Isthmian Canal Commission, but only for actual services rendered. If the service is not rendered, the payment is not made.

The CHAIRMAN. What is the unexpended, unobligated balance of that appropriation, Gen. Lord?

Gen. LORD. Which appropriation is that?

The CHAIRMAN. "Hospital care, Canal Zone garrisons."

Gen. LORD. Hospital care, \$50,000, I have here.

The CHAIRMAN. Well, then, you have not expended any of that money at all?

Col. WOLFE. I think the reason is that reports have not come in. That is handled, is it not, General, on the Canal Zone itself?

Gen. LORD. Yes; the allotments have not come through. This was March 24.

The CHAIRMAN. When would the allotments for that item come through?

Gen. LORD. Of the appropriation of \$45,000 in 1915 they spend \$31,201.82; in 1916, out of the same appropriation, they expended \$33,000 plus; in 1917, out of the same appropriation, \$45,000, there were expended \$42,255.20.

Col. WOLFE. And the appropriation for 1918 is entirely expended.

Gen. LORD. The appropriations for 1918 and 1919 were all expended.

The CHAIRMAN. What is the force in the Canal Zone at the present time?

Col. WOLFE. As reported by the Adjutant General for February 29, 1920, officers, 209; enlisted men, 3,994; total, 4,203; the strength for the preceding years were:

Year.	Officers.	Men.	Total.
1914.....	66	2,010	2,076
1915.....	182	5,721	5,903
1916.....	240	6,783	7,023
1917.....	261	9,280	9,541
1918.....	331	10,841	11,172
1919.....	220	5,604	5,824

The CHAIRMAN. The next item is, "Army Medical Museum." I see that you are asking for an increase of \$10,000 on that item. That is about twice as much as you had last year.

Col. WOLFE. I have here a statement from the curator indicating the exact purpose for which these funds are required, which I would be glad to put in the hearings.

Mr. McKENZIE. How much of that last year's appropriation has been expended?

Gen. LORD. Last year's appropriation for what?

The CHAIRMAN. Army Medical Museum.

Gen. LORD. Of the current appropriation, the unobligated balance is \$2,000.

The CHAIRMAN. As a matter of fact, we doubled the allowance for that purpose about two or three years ago, did we not?

Gen. LORD. Yes; it ran forward from 1909 to and including 1917 at \$5,000 a year.

The CHAIRMAN. What is the object of making it \$20,000 a year at this time?

Col. WOLFE. The principal reason is the mass of material that came in from the war to take care of that. As I said, I have all the information here and I shall be glad to put it in the hearings, if you care to have it.

The CHAIRMAN. If you will kindly do so, we will greatly appreciate it.

Col. WOLFE. If you wish, I can read the headings, and the sums for the different classes of material at the present time.

Mr. McKENZIE. Does that include placing the guns and things of that sort in the museum?

Col. WOLFE. No.

The CHAIRMAN. Is there anything further?

Col. WOLFE. Just to run over it briefly, the estimate covers museum jars for putting the specimens in for preservation, the chemical material for preparing the histological—that is, the microscopic material—the preparation and purchase of medical specimens, certain materials for photographic illustration and for taking the necessary photographs, and for the preparation of wax models. It is all outlined in the statement.

(The statement referred to is as follows:)

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, December 15, 1919.

Memorandum of expenditures for the fiscal year 1921, Army Medical Museum.

The following is estimates of expenses for the next fiscal year:

Department of Pathology:	
Museum jars.....	\$12,000
Preservative chemicals.....	4,000
Material for preparing histological matter.....	500
Preparation and purchase of models and specimens.....	1,500
Photographic laboratory, supplies.....	1,500
Department of anatomical art, preparation of wax models and paintings....	500
Total.....	20,000

In explanation of the above estimate the following memoranda is appended:

(a) *Museum jars.*—Previous to the war, museum glassware, the chief item of which is jars for the exhibition of specimens, was procured in Germany. It is now necessary to procure museum jars in this country, and as this industry had not been practiced to any extent in this country, it has been necessary to practically establish a new industry. Accordingly, museum jars are very expensive at the present time. The estimate above is based upon 2,400 jars, average price \$5 each. Making a total of \$12,000 for the purchase of museum jars alone. These jars are absolutely necessary if the very important collection of wounds and other conditions collected in this country and abroad during the war are to be preserved and exhibited.

(b) *Preservative chemicals.*—The price of all chemicals has advanced during the war, and a large amount of material is necessary in the preservation of specimens. The estimate of \$4,000 for preservative chemicals is for the chemicals used in the preservation of specimens only. It requires about 8 liters of fluid to preserve a single specimen, as the process is an involved one and several changes have to be made of fluid. Glycerin for this amount of fluid costs about \$1 and the potassium acetate, formaldehyde, and nitrate approximately the same amount, so that the estimate per specimen would be \$2. At least 2,000 specimens should be put up during the year, which would make the cost \$4,000 as noted.

(c) *Material for preparing histological material.*—This includes paraffin and an imbedding oven at a cost of about \$200; expensive stains, chemicals, knives, and hones. \$300. It is impossible to itemize the cost of chemicals and stains used in this work as they are continually advancing, but an approximate estimate is put at \$250 for stains and chemicals alone. Total, \$500.

(d) *Preparation of models and specimens.*—The estimate of \$1,500 is to cover the cost of purchase, preparation, and preservation of models and specimens for exhibition purposes in the museum. The museum is offered many opportunities for the purchasing of such material, and it is also essential that models be made frequently of objects having a distinct value in medical education, not only to the military surgeon, but to the general profession. These models are expensive, particularly those which illustrate sanitary and hospital appliances, and are of great educational value, and as they occupy less space than the actual apparatus, they are suitable for exhibition purposes in the museum. It would be impossible to exhibit the originals from which these models are made on account of lack of space. It is believed essential, if the museum is to continue to be of educational value to the military surgeons and the medical profession, that numerous models be made of sanitary and hospital appliances evolved during the late war, and the estimate of \$1,500, given above, is a very modest one. Prior to the war practically the entire museum appropriation was expended for this purpose.

(e) *Photographic laboratory.*—The following items comprise those included in the estimate of \$1,500 for this department. The preservation of many rare specimens through the aid of photography is essential in case these specimens are stolen or lost in any way. It is our policy to make photographs of valuable specimens when received and these photographs are filed for future study and reference. This is a most essential part of the museum work, as it enables us to keep a record of valuable material which can easily be referred to, and we are able in this way to supply prints of valuable instructive material to the services and the general medical profession.

Equipment:

Lens filters, set.....	\$60
Mercury vapor lamps and renewals.....	100
Photomicrographic equipment.....	50
Photostat camera, repairs.....	50
Screen reflectors.....	40
Tanks, plate and film holders, and other miscellaneous dark-room equipment.....	50
	<hr/> \$350

Materials:

Photographic chemicals.....	350
Plates and films.....	400
Photographic paper, mounts, filing jackets, etc.....	350
Miscellaneous.....	50
	<hr/> 1,150

Total..... 1,500

(f) *Department of anatomical art (including wax models and paintings).*—A total of \$500 for this department is to be expended as follows:

400 pounds wax, at \$0.78 per pound.....	\$312
3,000 pounds plaster of Paris, at \$0.03 per pound.....	90
Paints, brushes, and necessary supplies.....	98
Total.....	500

This department has very accurate wax models of various conditions, observed during the war, and it is essential that this work be continued.

CHARLES F. CRAIG,
Colonel Medical Corps, United States Army,
Curator, Army Medical Museum.

The CHAIRMAN. One of the important things done by the Army Medical Museum is the publication of certain books or catalogues, is it not?

Col. WOLFE. It is the library, Mr. Chairman, that handles that.

The CHAIRMAN. The medical library?

Col. WOLFE. There are two appropriations. May I say that this museum is the only one in the country that handles exclusively the war pathology, and it is open to the medical profession of the whole United States, who very frequently avail themselves of this material.

The CHAIRMAN. Where is the item for Army Medical Library?

Gen. LORD. The Surgeon General's library is omitted from your print, although it is in the Book of Estimates. We have a copy of it here, which may be inserted in the record.

(The item is as follows:)

For the library of the Surgeon General's office, including the purchase of the necessary books of reference and periodicals, \$20,000.

The CHAIRMAN. Did the Secretary forget to make an estimate for that?

Gen. LORD. It was in the Book of Estimates, but omitted from your print.

Col. WOLFE. The sum is \$20,000, Mr. Chairman.

The CHAIRMAN. What was the amount that you received last year?

Col. WOLFE. \$20,000, I think.

The CHAIRMAN. Has it been \$20,000 for the last two or three years?

Col. WOLFE. Yes, sir.

Gen. LORD. The unallotted balance, under date of March 24, is \$3,976.93.

The CHAIRMAN. Do you know how much of that is obligated?

Gen. LORD. According to my books, none of that is obligated.

Mr. McKENZIE. That is set for periodicals, books, and the printing of this particular document that has been spoken of by the chairman, as I understand it.

Col. WOLFE. Yes, sir; it covers American journals, American books, foreign journals, foreign books, portraits, autographs, library equipment, and transportation of these supplies. I submit herewith the estimate of the librarian.

DECEMBER 15, 1919.

Memorandum for the Surgeon General:

The following is the project of expenditure for the \$20,000 library Surgeon General's Office appropriation. It is desired that this appropriation be in lump sum as in the past, rather than under the items listed below, in order that the various market con-

ditions can be taken advantage of by such changes as may be necessary in these listings:

American journals.....	\$2,500
American books.....	2,000
Foreign journals.....	5,000
Foreign books.....	5,000
Portraits, autographs, etc.....	400
Library equipment.....	2,500
Incunabula, Americana, etc.....	2,500
Transportation.....	100
Total.....	20,000

This appropriation will not be sufficient to meet the demands made upon the library during the next fiscal year. The annual rate of subscription for the medical periodicals is being increased from 20 to 25 per cent. The same holds true in regard to the increased book cost. While it is true that a certain number of books are deposited in this library by the Library of Congress, this does not represent anything like the entire American output, since all books considered desirable are retained by the Library of Congress. The amount allowed above for these purchases will not cover the needs.

The book markets of the Central Powers in Europe are just opening again after four years of accumulation. The library should be provided with at least \$5,000 additional to secure this material. Owing to the limited editions of most of these items, it is imperative that the library purchase as many as possible before the supply is exhausted.

In connection with this appropriation special attention is invited to the fact that during this fiscal year no binding has been provided for. This has resulted in the banking up of some 4,000 volumes waiting for binding. With the acquisition of the material now in sight and that which will be received within the next 12 months, a total of more than 10,000 volumes will have accumulated for binding. As you are aware, this has been heretofore taken care of in the printing and binding appropriation of the War Department. If, however, ample provision is not to be made in this fund for the purpose of binding these volumes it is imperative that a special appropriation be secured for this purpose. The cost involved will range between \$1.75 and \$2 per volume, making the need for 1921 approximately \$20,000. Some definite and special provision should be made for this purpose.

Incorporating all of the needs above-mentioned, the library should be provided with \$45,000 if the functions of the institution are to be thoroughly and efficiently handled.

ROBT. E. NOBLE,
Brigadier General, Medical Department, United States Army,
Librarian Surgeon General's Office.

The CHAIRMAN. I believe it is considered the most complete medical library in the world.

Col. WOLFE. Yes, sir; it publishes from year to year an index of all medical literature.

The CHAIRMAN. And that index is sought by the medical institutions of foreign governments?

Col. WOLFE. Yes, sir; and the library itself is visited almost continually by other physicians.

The CHAIRMAN. Well, we are very much obliged to you, Colonel.

Gen. LORD. Col. Morrow, who represents the Reserve Officers' Training Corps, is here, and the first paragraph in which he is interested is on page 44 of the bill before the committee.

SUPPLIES, EQUIPMENT, ETC., RESERVE OFFICERS' TRAINING CORPS.

STATEMENT OF COL. F. J. MORROW.

The CHAIRMAN. Col. Morrow, the item in which you are interested in is on page 44, "Quartermaster supplies, equipment, etc., Reserve Officers' Training Corps." The amount appropriated for this item last year was \$4,000,000. You have an estimate for \$3,220,000. Will you kindly state to the committee what the principle items of expense are in connection with this particular appropriation?

Col. MORROW. Yes, sir. Mr. Chairman, in starting on that explanation, will you kindly permit me to state that we are of the opinion now that that estimate was made lower than it should be, for this reason, that it included, when submitted, an estimate for commutation of clothing for 40,000 students at \$30 each, whereas it should have provided for 70,000, or we are now of the opinion that with the new policy, or with the new method of uniforming the students which it seems wise to put into effect, namely of giving the institutions the right to elect whether they will draw uniforms in kind from the Government, or receive the commutation for the purpose. This will result in about 70,000 students taking the commutation, which would increase the amount of this estimate. It did not include the value of clothing in kind which would be issued by the Quartermaster Department from the stock on hand.

The CHAIRMAN. In that very connection, if they accept the commutation of clothing, do they have uniforms made of the same kind of cloth that our Army uses?

Col. MORROW. Not necessarily, it is left to their own judgment, Mr. Chairman.

The CHAIRMAN. Now, is it not a good thing, or would it not be a good thing to have them all wear the uniform of the United States?

Col. MORROW. There are two schools of thought on that. We have had two large conferences with educators in the War Department within the last month, and that question was submitted to them. It seemed to be the opinion of the majority that it was better to let the institutions, on the whole, select their own type of uniform. There were a few who thought that it strengthened their control over the students to place them in the uniform of the United States. Others thought that it was better for the institutions to select their own uniforms. Take institutions like the Virginia Military Institute. It has had a uniform of its own for a great many years; also Norwich University. There are many others, and it would be a good deal of a hardship to require them to change their uniforms.

The CHAIRMAN. Well, these camps really are for a period of six weeks, as I understand it.

Col. MORROW. Yes, sir.

The CHAIRMAN. These uniforms for which they get commutation will probably last a considerably longer period of time, will they not?

Col. MORROW. Possibly so. The uniform that the student receives at the camp is given only for the period of the camp, and then it is turned in. That uniform is not issued to the student to take away with him. It is salvaged.

The CHAIRMAN. But if the uniform is not olive drab, of the character that is worn by our Army, does not the student use that uniform after he leaves the camp?

Col. MORROW. He does not take the school uniform to the camp at all, sir. In four years, he is only required to go to one of the summer camps for six weeks. During his four years at the school he wears the uniform either which the Government issues or which the school provides with the commutation, and we are putting into effect regulations to insure the maximum use of that clothing and commutation, so as to make it unnecessary to give a complete uniform each year, as has been done in the past. Thereby we hope to make a saving this coming year and more in the second year, and so on.

The CHAIRMAN. Then, it is your idea, and the idea of the War Department, that by giving this commutation instead of the uniform you will be really effecting a saving in the matter of uniforms?

Col. MORROW. Yes, sir; and not only effecting a saving, Mr. Chairman, but it will give far more efficient service. The Army uniform that is issued is not satisfactory for young men at schools and colleges. We have not been successful in fitting the individual students with those uniforms. It is not as neat and trim a uniform as a boy wants. He can not wear it with the pride and satisfaction that he should. He does not look smart. If a young man does not feel that he appears well in his clothes, he is not happy in them even if it is the uniform of his country.

Another bad feature has been the delay it takes to get the uniforms to them in the fall. To supply 125,000 students in the fall of the year, between the opening of school and Christmas time even, is a difficult matter. They should have their uniforms soon after the opening of school. If they know they can get the commutation the institutions will arrange through the summer, make contracts locally, and get their corps uniformed in the minimum of time.

The CHAIRMAN. Of course, most of these students are growing boys.

Col. MORROW. Yes, sir.

The CHAIRMAN. And a uniform that might fit this week in three or four months from now might be very short in the pants and might be very tight in the coat?

Col. MORROW. Yes, sir.

Mr. GREENE. What weight is given to the argument of nationalization? That is to say, the very fundamental purpose of this thing is to get men to think alike in military terms in every neighborhood in the country; and to get that thought permeating the schools and the homes of the families and the village post office, is not the uniform somewhat of an inducement to them?

Col. MORROW. Many think so, Mr. Greene, and then others do not, and they argue this way: The West Point uniform is not the Army uniform. Those who think that it is not desirable to issue the Army uniform argue that you should not make a boy feel that he is something that he is not. If you give him a uniform which is a soldier uniform, and try to give him any impression of being a soldier, that you are doing him an injury. It is better to let him know that he is a cadet, that he is in a probationary or preliminary period of training, and he has a uniform that belongs to that condition. That if he does become an officer in the reserve corps he will then wear the uniform

of the Government of the United States. The West Point uniform, on the whole, I think, is the more satisfactory for cadet organizations. If the institutions see fit to adopt a cadet uniform similar to that of West Point, I think it would more than nearly serve our ends.

Mr. GREENE. In the nationalization idea?

Col. MORROW. The nationalization idea we must secure through the common teaching, rather than through the uniform.

Mr. GREENE. I only realize its value as a symbol.

Col. MORROW. And there has been criticism of boys generally wearing the Army uniform, due to the fact that a great many of these youngsters do not appear well in the uniforms of the service.

Mr. McKENZIE. Is not the use of the uniform, as a matter of fact, only an element in inducing the young men to take the training? Training is really the thing we are after, and any kind of uniform, whether it is the uniform of the United States soldier, or any other very nice looking uniform such as the cadet wears—the very fact that they can do that thing, and get out in a body and make a little show is an inducement to young boys and young men to come in and take the training, and in that way the uniform has served its only purpose, in my judgment, because I do not believe by putting a uniform on a man, a soldier's uniform, you make him a soldier.

Col. MORROW. Yes, sir, I think that is correct. I think that is a very fair view of it.

I wanted to bring out that point, Mr. Chairman. I think it is desirable to offer that inducement. It is in the interest of economy, it is in the interest of better supply and of greater efficiency. So I would urge the consideration of the \$4,120,000, which is an increase of \$900,000 over the previous estimate to permit of a broader acceptance of the commutation.

The CHAIRMAN. You are figuring, as I understood you, on an estimate of 125,000 students?

Col. MORROW. On a total enrollment of 125,000 in the entire corps. That has been limited by the Secretary of War to the coming year, and we can not exceed that.

The CHAIRMAN. And will that entire amount be spent upon the camps this year?

Col. MORROW. No, sir; there will be less than 10,000 students attending the summer camps this year.

The CHAIRMAN. Ten thousand at the summer camps?

Col. MORROW. Yes, sir.

The CHAIRMAN. So that this appropriation does not apply alone to the summer camps but to the teaching of the students during the year?

Col. MORROW. Yes, sir.

The CHAIRMAN. What will be the expense of the summer camps alone?

Col. MORROW. Summer camps will cost about \$100 per student.

The CHAIRMAN. So that the overwhelming portion of this is for training other than the training at the camps?

Col. MORROW. Yes, sir; it covers everything throughout the year except the value of the uniforms issued by the Quartermaster Corps; there will be few other items. The motor transport will have some items connected with the upkeep of the motor equipment that are part of their units.

In this connection may I bring up one other point that will bear on that, Mr. Chairman. In order that these amounts can be disbursed, there should be one or two changes made in the appropriation act itself. I have a draft showing the present wording of the current act and the suggested change.

The CHAIRMAN. Will you kindly hand the changes that you propose to make to the reporter for insertion in the hearings as a part of your remarks?

(The matter referred to is as follows:)

PROPOSED CHANGES IN LANGUAGE IN ARMY APPROPRIATION ACT.

Appropriation item: Quartermaster supplies, equipment, etc., Reserve Officers' Training Corps.

Service recommending changes: Reserve Officers' Training Corps branch.

WORDING OF CURRENT ACT.

For the procurement and issue, under such regulations as may be prescribed by the Secretary of War, to institutions at which one or more units of the Reserve Officers' Training Corps are maintained, such public animals, uniforms, equipment, and means of transportation as he may deem necessary, and to forage at the expense of the United States public animals so issued; for transporting said animals and other authorized equipment from place of issue to the several institutions and return of same to place of issue when necessary; for the maintenance of camps for the further practical instruction of the members of the Reserve Officers' Training Corps, and for transporting members of such corps to and from such camps, and to subsist them while traveling to and from such camps and while remaining therein so far as appropriations will permit; for the payment of commutation of subsistence to members of the senior division of the Reserve Officers' Training Corps, at such rate, not exceeding the cost of the garrison ration prescribed for the Army, as authorized in the act of Congress approved June 3, 1916:

PROPOSED WORDING.

For the procurement and issue, under such regulations as may be prescribed by the Secretary of War, to institutions at which one or more units of the Reserve Officers' Training Corps are maintained, such public animals, uniforms, equipment, and means of transportation as he may deem necessary, and to forage at the expense of the United States public animals so issued; for transporting said animals and other authorized equipment from place of issue to the several institutions and return of same to place of issue when necessary; and to employ civilian educational consultants; for the maintenance of camps for the further practical instruction of the members of the Reserve Officers' Training Corps, and for transporting members of such corps to and from such camps; to subsist them while remaining at such camps and to furnish them medical attendance and supplies and to pay students attending advanced course camps at the rate provided for privates of the Regular Army so far as appropriations will permit; for the payment of commutation of subsistence to members of the Senior Division of the Reserve Officers' Training Corps, at such rate, not exceeding the cost of the garrison ration prescribed for the Army, as authorized in the act of Congress approved June 3, 1916: *Provided*, That so much of section 48 of the act of June 3, 1916, entitled "An act for making further and more effectual provisions for the national defense, and for other purposes," as relates to the transportation of members of the Reserve Officers' Training Corps attending summer camps be, and the same is hereby amended so as to provide that such members of the Reserve Officers' Training Corps shall be paid as traveling allowances 5 cents per mile for the distance by the shortest usually traveled route from the places from which they are authorized to proceed to the camp and for

the return travel thereto: *Provided further*, That the payment of travel pay for the return journey may be made in advance of the actual performance of travel: *Provided further*, That the Secretary of War may, in his discretion and under such regulations as he may prescribe, permit such institutions to furnish their own uniforms and receive as commutation therefor the sum allotted by the Secretary of War to such institutions for uniforms.

Col. MORROW. One point that is added is in reference to the employment of educational consultants. I might make a little explanation of that.

The CHAIRMAN. If you will.

Col. MORROW. It is desirable that provision be made authorizing the employment of one civilian educator at each of the six department headquarters in the United States in connection with the supervision and development of the Reserve Officers' Training Corps. At the present time every effort is being made to coordinate the military training and the academic instruction in the Reserve Officers' Training Corps so as to secure a better product both for the Army and for civil life. It is necessary to arrange the courses and methods of instruction in military science and tactics so as to strengthen and supplement the regular school work. To do this effectively requires close cooperation at the top between Army officers and civilian educators. Such cooperation is provided in the War Department, but the recent decentralization of control makes necessary similar civilian assistance at department headquarters.

They would not be needed throughout the entire year, but should be called once or twice a month for short conferences. Not more than six educators in all would be needed. Provision for the reimbursement of their expenses and a reasonable remuneration—about \$20 per day—would be necessary. The entire sum needed would not exceed \$10,000 annually.

In the vocational training in the Army, and in inaugurating this Reserve Officers' Training Corps since the war, the assistance of civilian experts, who are familiar with the educational side of the problem and who are educators themselves, has been a tremendous asset. There is now attached to the vocational training of the Army a considerable corps of experts, who are men taken from civil life and know how to interpret educational needs to the military conditions. In order that the War Department can develop the affiliation to make military training in schools of a character such as to satisfy the institutions, we should have the counsel and advice of educators that know the problems that are connected with curricula, courses, and general conditions. Dr. Mann, who is a civilian advisor attached to the War Department, is simply invaluable in that capacity. Provision is made in this suggested change for the employment and utilization of a few expert consultants who would counsel the department commanders directly charged with the operation of the Reserve Officers' Training Corps.

Mr. MCKENZIE. Well, Colonel, we provided for the assignment of Army officers to these various schools to instruct the other men in military training and the military training is only put into such

schools and colleges that are willing to comply with the regulations laid down by the Secretary of War.

Col. MORROW. Yes, sir.

Mr. McKENZIE. Now, I am frank to say that I can not quite see the necessity of going out and hiring some other civilian professor to go into that school and coordinate the activities of this Army officer that we sent down there, and the professors that the State or municipality is paying to teach them in school.

Col. MORROW. No, sir; that is not the point, Mr. McKenzie. The purpose is to use one such person, either in the War Department or at department headquarters, where the character of the military training, theoretical and practical, is determined—and much of it is very scientific and technical. The country is divided into department areas, and the supervision and administration of Reserve Officers' Training Corps is decentralized.

Mr. McKENZIE. Now, then, if you will permit me, of course you know that I am from the State of Illinois?

Col. MORROW. Yes, sir.

Mr. McKENZIE. And being from that State, I take a good deal of pride in our State university, and I believe it is a very good one. We have had some splendid men at the head of it. I think they know how to run a university. I think they know how to prepare a course of study, and for the life of me I can not see the necessity of the Federal Government now—we have had military training, of course, in every one of the land-grant colleges for years and years—employing some civilian expert to go out to that school and tell them how to run it. In other words, it seems to me that we go a little wild sometimes on this matter of advising and creating new activities. I may be wrong about it, but I feel that during the war we created too many different activities down here in the War Department at Washington, and that it was difficult to function, and it seems there ought to be a limit somewhere to these advisers of the various bodies for which we are appropriating money. I may be wrong about that, but that is the way it strikes me.

Col. MORROW. The counsel and advice of those men are wanted to insure that the military program will be acceptable to the institution. That is a material and actual condition, a problem that has to be met in order that the Reserve Officers' Training Corps will satisfy the academic standards. They can help tremendously in that way, to the mutual benefit of the schools and the Government.

Mr. McKENZIE. Now, let me go just a little further. Suppose I have a boy at the State university who is taking up a law course in the law division of that university. He certainly would not need any one to advise him or to advise his instructor. He is there to study law and take the military training provided by the law that he must take in that institution.

Mr. GREENE. I share in a more or less uncertain sense, Col. Morrow, your appreciation of the necessity for that thing. I understand that one of the purposes of this civilian advice is to find the most practical way of articulating your military course with the curriculum of the institution so that credits for degrees, and so on, may proceed on something like a harmonious basis. Due weight being given to the point you suggest; that is, its relation to the academic credits demanded by the university, and that expert advice in pedagogical science is necessary to get that done.

That would be true if you act on the assumption that a university or school is taking over the system of military instruction as a gratuity to the Government, and if that is the basis of reasoning, that the schools are really obliging the Government by doing that, and that there is no real purpose in the schools doing it other than as an assistance to the Government, why, then, the school should be consulted first about what is introduced into its curriculum, but if the school proceeds on the idea that it is a part of the instruction of youth, and ought to be a constant part of its curriculum in the preparation of youth to assume the duties of citizenship, then why is not the obligation on the school to adjust its own curriculum?

Col. MORROW. Let me make another explanation of it, Mr. Chairman, because this is an important matter. In order to get students to take military training, we find that the first point they consider is whether or not they get academic credit for it. If they can get academic credit for this work, then it makes them lean toward it. If it is something that is imposed in addition to their other work, then they hesitate very much.

The point that then influences him is whether or not it is an obligation. The young man in college is rather a cold-blooded individual and considers what is necessary in order to get through the institution. In order to get the institution to give him academic credit for military training, it has got to accomplish an educational end. If it is merely military training in the sense of being a drill-ground system, the institution will not give credit for it. They will say, "This does not serve an educational purpose and therefore we are not justified in giving academic credit for that which is mechanical."

Mr. GREENE. Then may I not follow that further by stating this? Has it not been a great problem in the recent development of our social order, that the schools have been reluctant to come out of the cloister—I mean the higher educational institutions—and have constantly in what seems a practical world rather obstinately repelled any outside influence for changes in the development, modification and modernization of their curriculum? Is not the obligation more on the school itself than it is upon the Government to make that adjustment, and is not that the place where the influence and the weight of the argument should be centered, and not upon making us do it?

I say that with a full realization that you gentlemen are pioneering now, of course, and you are introducing this to a class of pedagogues who are more or less reluctant to take it up at all; but would not that be the place where the weight of the argument should be case, that it was the duty of the school to adapt itself to modern conditions to meet a national demand, rather than throwing the responsibility on the Government to supplement the school?

Col. MORROW. The schools consider military instruction a supplementary affair. It is a secondary consideration with them, and it is difficult to induce many of them to recognize the military training on a par with the academic work. Unless it is so recognized, a large proportion of college students will not go into it. The Reserve Officers' Training Corps should reach the best quality of students to accomplish its real purpose.

Mr. GREENE. Exactly, but they are as helpless as any other people with pacifist tendencies are, without the big, strong arm of this

Government to maintain them and their foundation when another country tries to supersede them. Why can you not make the weight of the argument on the school people to conform themselves to modern conditions and demands rather than have the obligation entirely on the Government, which is really, after all, their own support?

Col. MORROW. They judge the military department by academic standards. If our instruction, both theoretical and practical, does not come up to those standards, and if it does not compare well with the scholastic work of other departments in the institution they will not give it academic credit.

The CHAIRMAN. Take the case of the land-grant colleges. Under their charters they are compelled to maintain a college of agriculture, and also to give military training.

Col. MORROW. Yes, sir.

The CHAIRMAN. Do the students in those universities get credit for their military training?

Col. MORROW. Get academic credit?

The CHAIRMAN. Yes.

Col. MORROW. In some instances they do and in others they do not. It varies a good deal. It is increasing. We have developed it a good deal this last year, Mr. Chairman, so that it is now gratifying to see the amount of academic credit now given by some schools. If they make military training compulsory for the first two years, in the last two years all the students do not elect to take it. If we do not get the students to go through the four years' course, into the junior and senior years, we are not going to get the product that is contemplated in the Reserve Officers' Training Corps. In other words, we are not going to get the reserve officers.

The CHAIRMAN. Did I understand you to say that the idea of giving credits for military training at even the land-grant colleges is to induce the students to take not the two-year course, but the four-year course?

Col. MORROW. Yes, sir; I think that is a fair statement.

The CHAIRMAN. Now, is that optional with the students?

Col. MORROW. Yes, sir.

The CHAIRMAN. I understand that they must take the training in the freshman and sophomore years.

Col. MORROW. In most of the land-grant institutions that is true; in some it is more than that.

The CHAIRMAN. By giving this credit in the junior and senior years are a large number of students induced to continue their military training?

Col. MORROW. They will be, sir. That is one of the inducements to endeavor to get them to remain in for the four years.

The CHAIRMAN. You have not tried that out yet?

Col. MORROW. We know from what the educators say that unless that advantage is offered the students, we will have a lower enrollment. If I may further explain, there are three stages through which the Reserve Officers' Training Corps student passes. Under the national defense act the course extends over a period of two years, and at the end of those two years the student has the right to elect whether or not he will drop out of it or continue for two more years. Then, even after graduation, there is still the condition of election as

to whether or not he will take a commission in the Reserve Corps. At any of those intervening points the student can drop out. He can drop out at the end of two years or at the end of four years, or upon graduation he may elect not to take a commission. At the present time, during the last year at least, it was evident that the problem was going to be to induce the students to pass through the four years of the course and then take the commission. If they do not, we will not be able to say at the end of four or five years that we have got a concrete result in officers for the Reserve Corps.

The CHAIRMAN. Are you granting commissions at all to those students of the land-grant colleges who take only the two years' course?

Col. MORROW. No, sir. If a student does not go through the four years' course and does not qualify under it, he is not eligible for a commission. If he does take the four years' course of instruction, he is automatically entitled to a commission.

The CHAIRMAN. And he is put in the Officers' Reserve Corps?

Col. MORROW. Yes. We have got 4,568 students in the advanced course in the colleges; only that number out of, say, 56,000 or 55,000 who are in these college units. Those are college units. If we are not able to build up the advanced courses so that we are going to get something like a graduation of 5,000 or 6,000 a year, it is not going to accomplish the full purpose of the R. O. T. C. The obstacle we have got to overcome is the tendency to drop out at the end of two years. The students are prone to enter it for two years, but go no further. Of course, something is accomplished by that, but it is not the realization of the aims of Congress as expressed in the national defense act.

The CHAIRMAN. I might say parenthetically that in most instances formerly it was a very perfunctory performance.

Col. MORROW. Before the war there was not the proper practical result. In order to justify the R. O. T. C. conception and secure officers for a reserve corps, inducements must be held out to the students. Take the land-grant institutions, which require in the first two years compulsory training. Now, then, to get the student to take the military training in the last two years, we give him commutation of rations—that is, \$12 a month—and there is a provision in the Army reorganization bill for those students who go to the summer camps to receive the pay of a private. That is another inducement. I might say that I think that the biggest inducement of all is academic credit. If we can say to a sophomore who has become a junior, "If you take our military course for the next two years, you will get 10 or 12 or 15 points toward graduation," it has more influence on him than the \$12 pay. The requirement that the student must take one camp in the advanced course is a very great deterrent. It is surprising to learn how many students are absolutely dependent on earning their living to finish their college course. From 40 to 50 per cent of the students must obtain pay through the summer in order to continue in college next year.

When we say to the student, "You have got to go to camp for six weeks, and you get your rations, and you get transportation to and from the camp, but you get no pay," it keeps them from entering the Reserve Officers Training Corps for the last two years. It interferes with their earning opportunity through the summer, and bright students can make \$100 a month—that is keeping them out of the

advanced course. The measure you have in the Army bill to pay such students at the camp is going to overcome the condition to some degree. In talking to the educators as to how much they thought the remuneration ought to be, they usually put it at \$100 a month.

So, to get back to the point, we have got to make the course sufficiently educational to get academic credit for it. Army officers do not know how to do that. We have got to put it into an institution in a way that will win its academic recognition. There is where we need assistance, and in that way the consultants can perform an invaluable service by counseling us how to do it. If we do not secure academic recognition the military training will be only a drill ground system and it will not produce officers for the Reserve Corps.

Mr. GREENE. It seems to me that only leaves us where we began, because anybody going up against the established caste of the pedagogue knows it is hard to overcome his ideas about it. He has been a good many centuries coming out of the cloister with his ink horn and plume. Now we are trying to get the pedagogue to think that this is really a practical world and his mission with the youth entrusted to his care is to prepare them to live in it, but he keeps refining in his refinements, and keeps introducing a longer system of prep schools between the public institutions and himself, and he feels himself so exalted that he will not allow this thing in the class with him. That is what you are up against.

Col. MORROW. Yes, sir.

Mr. GREENE. I know. I used to be interested in those things back home. It seems to me that in the modern educational institution at least a part of their practical curriculum is not only to prepare a young man to live in the world as it is, but to fit him for that social order to maintain it, and their own safety, the foundation of their own establishments, depends upon sending out into the world young men who are not only sentimentally pledged to the loyalty of the alma mater, but to the country that makes it possible to have one. It seems to me the obligation is on the school and not upon the Government.

Col. MORROW. That is the way it should be, Mr. Greene, and a number of educators now regard military training as very desirable, due to its beneficial reaction on the institution and because of its educational features. Still, there are many who do not look upon it in that way, and we know that before the war it was very difficult to get institutions to regard military training seriously.

Mr. GREENE. Do I understand that there are some land-grant colleges in which military training is left optional at all?

Mr. MORROW. I would say that they all make it compulsory for at least one year. Some make it compulsory for four years. Most of those institutions make it compulsory for the first two years.

Mr. GREENE. How can they be reconciled with the proposition that their very foundation had, for one basis, the obligation of Government support in return for a certain amount of military instruction? How can the option rest with them?

Col. MORROW. That act simply provided that they should offer it. They take the position that the legal interpretation would be that if they merely offered military training, and not a single student in the institution took it, they would be complying with the law.

Mr. GREENE. That is a kind of mock-auction proposition, is it not?

Mr. MCKENZIE. If they did not take military training, could they not penalize them with respect to their eligibility for graduation?

Col. MORROW. The national defense act, in providing for the Reserve Officers' Training Corps, makes the condition that if the student elects to take it for the first two years, he must finish the first two years; he can not draw out. If he elects to take it in the last two years, he must take it those last two years, but the institution is not required to make one single student go into the Reserve Officers' Training Corps.

The CHAIRMAN. The language in the Morrill Act upon the subject of military training is very indefinite. There are only a few words about it in the act?

Col. MORROW. Yes, sir. It states "and including military tactics."

Mr. GREENE. But it nevertheless was known to be the foundation idea upon which the Government interested itself in the support of such institutions.

The CHAIRMAN. Not only that, but the maintenance of an agricultural college was looked upon as very essential; as much so as the military training.

Mr. McKENZIE. And it is true, I take it, that the Morrill Act did not contemplate the training of officers as you contemplate it at present, but simply the rudiments of military training of a soldier.

Mr. GREENE. Yes, I know; but everything of that kind has to be judged by the light of the times in which it is instituted. Good old Justin S. Morrill came from my State, but even with his vision, which was very wide in those days, I do not think he ever contemplated in the agricultural schools drawing a plow by tractors. I think agricultural science has developed beyond his dreams, and you will notice that these people still rely on those words for agriculture all right, but when it comes to military training and the advantage of the school soldier maintaining an army for some necessity, that is kept back of the other advantage for all time. They are defeating the fulfillment of that act.

The CHAIRMAN. The act was passed in 1862, when the country was in a civil war. It was undoubtedly Senator Morrill's idea that men should be trained at these land-grant colleges in military science and tactics so as to defend the country if it should be attacked.

Mr. McKENZIE. And for making up an army that the officers trained at West Point was supposed to command.

Mr. GREENE. That hardly could be a limitation, inasmuch as there is no limitation placed either on the agricultural or on the military side of it. It was supposed to bring out again the possibility that a great many would leave the plow and go to fight, when you put them both together.

The CHAIRMAN. Is there anything further, colonel?

Col. MORROW. Yes, sir.

Gen. LORD. The total unobligated balance, under the appropriation for quartermasters' supplies, equipment, etc., Reserve Officers' Training Corps, on March 24, was \$1,450,463.08.

The CHAIRMAN. Have you any idea, colonel, how much of that money will be used in the three months remaining of the fiscal year?

Col. MORROW. I think the major portion of it will be used, Mr. Chairman. We will have to inaugurate this year summer camps. They come before June 30, and with the matter of uniforms and commutation, I would say that the major portion of it will be used. There should be some saving.

The CHAIRMAN. There will be about 10,000 men at the summer camps?

Col. MORROW. Yes, sir.

The CHAIRMAN. Or is that the number you said would be there?

Col. MORROW. Yes, sir; we contemplate having this year about 10,000 students in the camps.

The CHAIRMAN. That would be at the rate of over \$100 per student?

Col. MORROW. All the expense of the camps will not come out of this year's appropriation. The camps run from June 17 into the latter part of July.

The CHAIRMAN. Some of the money will come out of next year's appropriation?

Col. MORROW. Yes, sir; and it will be necessary to have funds to inaugurate the camps for 1921.

Mr. McKENZIE. Where do you intend to have these camps, at some of the Government training grounds?

Col. MORROW. Yes, sir. They are all on Government reservations, Government cantonments. The Infantry camps are at Camp Devens, Mass., at Camp Benning, Ga., at Camp Custer in Michigan, and Camp Kearney in California.

The CHAIRMAN. Will you have only four camps?

Col. MORROW. Four camps for Infantry. The Coast Artillery will hold a camp at Fortress Monroe. The Field Artillery will hold a camp at Camp Knox, and the Engineers at Camp Humphreys; at these points they can get the very best technical training.

The CHAIRMAN. Suppose a young man was attending the University of California, or of Oregon, or of Washington, where he is over 3,000 miles away from Camp Humphreys; and suppose he elects to go into the Engineer camp, would you transport him clear across the continent to enable him to go to Camp Humphreys?

Col. MORROW. In all the camps, except the Infantry camps, the attendance is going to be relatively small. The creation of camps for these special units, for those arms other than Infantry, has only recently been made, and they will not have a very large attendance. But in order that the instruction given in those special arms should be of a high grade, it is felt that they should be conducted this year. With the development of the corps and the increase in the number of students, there should be training centers for all the arms evenly distributed throughout the country, so as to reduce transportation. To-day, however, the expense of creating a training center for a particular specialty would be just as great to the Government as it will be to send all the students into a training center already created.

For instance, take Camp Humphreys. To try to develop any other place with anything like the equipment that there is at Humphreys would be a very expensive thing. So up to a certain point it is cheaper to send the students to Humphreys rather than establish a training center at San Francisco or in Colorado or in Kansas. This year the students of the special arms will be brought to the training centers already established, but for the Infantry, which is the major portion of all the students, the four camps will reduce that transportation to a minimum.

Mr. McKENZIE. Will the Infantry come to Benning, Ga.?

Col. MORROW. There is one at Benning, one at Devens, one at Custer, and one at Kearny.

The CHAIRMAN. Custer, of course, is at Battle Creek?

Col. MORROW. Yes, sir; Michigan.

Mr. McKENZIE. Chicago is one of the greatest points for these student officers, is it not?

Col. MORROW. It has been, in years gone by; but they have a very large hospital there now.

Mr. McKENZIE. Well, Camp Grant is only about 70 miles from Chicago, and it strikes me there might have been considerable saving of transportation if you had those students at Camp Grant rather than at Custer.

Col. MORROW. If you do not have a considerable number your training is not on the same order. If your camps are small, the training is not of as high an order as where there are a considerable number combined in one camp.

Mr. McKENZIE. They have a rifle range there at Camp Grant and everything that is necessary.

Col. MORROW. Custer is a preferable place. It has facilities that Grant has not, and that is an object.

The CHAIRMAN. Of course, you would draw on Cleveland and Cincinnati and Pittsburgh, and all that eastern section, as against Chicago, Milwaukee, St. Louis, and that central region? You would draw them all to Camp Custer?

Col. MORROW. Yes, sir.

The CHAIRMAN. That is the plan?

Col. MORROW. Yes, sir; I think all the points you mentioned would all be centered at Camp Custer.

The CHAIRMAN. And that would be near the center of the entire region involved?

Col. MORROW. Well, at Camp Custer—

The CHAIRMAN. A little north of the center?

Col. MORROW. Yes, sir; a little north of the center. If you do not get them north and get them into a little more congenial climate than is found in the extreme South, the results are not beneficial, although Benning is an exception—and, of course, Kearney is particularly favorable. We felt that Benning had particular advantages for Infantry training. It is necessary to have the camps well chosen, for that naturally influences the attendance of the students.

Mr. GREENE. I would like to live to see the day when boys will grow up in this country with the idea that, notwithstanding the very proper instinct of self-preservation, he is also tinctured a little bit with the idea of some first duty to the State. A little bit of the Spartan business about it would not do any harm, in leaving so much elective between cigarettes and moving pictures.

Col. MORROW. Some spirit of service?

Mr. GREENE. Yes; and I would like to see a boy grow up with the sentiment that a country that other people have died for is good enough for him to live in and live for.

Can a part of the instruction in these camps for the Reserve Officers' Training Corps be conducted by demonstration on the part of troops of the Regular Army units?

Col. MORROW. There will be no troops ordered to any of the camps this year. We think there are enough at every place now; all that will be necessary. Whether or not for other years that would be desirable is another matter, but it will not be this year. Of course,

where they can see good troops and be given demonstration by the Regular Army, it has good effect.

Mr. GREENE. It would seem to me that inasmuch as so much of their training must of necessity be academic and bookish in school, that one of the very first essentials to make them fit Army officers and commanders would be to have them right out with the people who are actually doing the thing.

Col. MORROW. We are going to make them do it in the camps, and at all those places there are sufficient troops for them to see the way the Regular Army does, but the big thing is that they do the work themselves. They are put in Army cantonments, and they are in the ranks themselves. They are not to go there simply to witness maneuvers, but to learn to do things themselves.

The CHAIRMAN. Would you like to explain anything else to the committee?

Gen. LORD. On page 45, Mr. Chairman, Col. Morrow appears for that provision "Quartermasters' supplies for military equipment of schools and colleges," and he has asked, according to that, for \$100 to maintain the phraseology in the bill.

The CHAIRMAN. Is there anything further you desire to say on the previous item?

Col. MORROW. In this proposed change of the act there is another item which reads: "To subsist them while remaining at such camps and to furnish them medical attendance and supplies, and to pay students attending advanced-course camps at the rate provided for privates of the Regular Army."

That carries out the provision of the present Army organization bill. Unless there is an appropriation made, there will be no money available for it.

The CHAIRMAN. How much money is involved in that item?

Col. MORROW. We figure that for the next year there would be not to exceed 4,000 students who would be entitled to any pay under that language.

The CHAIRMAN. How much would that cost?

Col. MORROW. At the rate of approximately \$30 per student a month it would be 4,000 times \$45 for a six-weeks' camp.

The CHAIRMAN. Is that all you desire to say?

Col. MORROW. Then there is another provision follows:

That so much of section 48 of the act of June 3, 1916, entitled "An act for making further and more effectual provisions for the national defense, and for other purposes," as relates to the transportation of members of the Reserve Officers' Training Corps attending summer camps be, and the same is hereby amended so as to provide that such members of the Reserve Officers' Training Corps shall be paid as traveling allowances 5 cents per mile for the distance by the shortest usual traveled route from the places from which they are authorized to proceed to the camp and for the return travel thereto: *Provided further*, That the payment of travel pay for the return journey may be made in advance of the actual performance of travel: *Provided further*, That the Secretary of War may, in his discretion and under such regulations as he may prescribe, permit such institutions to furnish their own uniforms and receive as commutation therefor the sum allotted by the Secretary of War to such institutions for uniforms.

The new feature is the one of changing the national-defense act which stated that students would receive transportation to and from camp and subsistence itself, but the mechanical difficulties in the way of payment make it better to have a flat 5-cent mileage basis in lieu of both transportation and subsistence. This simply makes it necessary

to pay them 5 cents per mile, without figuring what their subsistence expenses were for the trip. The national-defense act provided for their transportation and the cost of subsistence while en route. The difficulty of determining that would be overcome by putting it on a plain 5 cents a mile basis.

The CHAIRMAN. Right along that line, the mileage allowed to the officers of the Army is 7 cents a mile, and yet we are asked to change the law because that mileage is found insufficient, under present-day conditions, to give the man traveling for Army purposes sufficient to pay his railroad fares and his subsistence.

Col. MORROW. It was thought that 5 cents would just cover the expenses. All that is needed is to cover railroad fare and meals; no hotel bills, etc.

The CHAIRMAN. Do you believe that 5 cents will do that better than the proposition that is in the law at the present time, or is it simply a matter of saving somebody some bookkeeping work?

Col. MORROW. Putting it at 5 cents a mile is to save the difficulty of computing it, which delays the boys getting their money. As to whether it should be 5 cents or 6 cents or 7 cents per mile, I think 5 cents per mile will actually cover his expense, both his railroad fare and his subsistence.

The CHAIRMAN. Is there anything further?

Gen. LORD. There is one other estimate here for \$500,000, on page 59.

Col. MORROW. That is on civilian and military training camps. The national defense act, in section 54, provided for civilian military training camps.

The CHAIRMAN. Yes.

Col. MORROW. To carry that out and to permit of the training of 4,000 civilians this summer would involve a cost of \$500,000.

It is desirable to continue these camps this year along the lines previously adopted. They were popular amongst the men of the country of all classes who had not had a former opportunity to fit themselves for service and because of that they were, and still are, an important element of preparedness. These kinds of camps were generally known as the Plattsburg camps, but they were not restricted to Plattsburg and this summer they would be so located as to be accessible to all sections of our country. They would be held in August or September and last for a month.

In the last appropriation bill there was only a nominal amount appropriated for these camps and no camps are proposed for this fiscal year.

The camps for this August or September are dependent on the provisions made in this bill.

Gen. LORD. Of the \$100 appropriation for the current year there are \$68 unobligated.

There is a \$100 item here. We can just check that off, I suppose?

The CHAIRMAN. Yes. At what page is it?

Gen. LORD. It is on the same page, page 59. It is just \$100 to hold the phraseology.

The CHAIRMAN. I see. Very well.

(Whereupon, the committee adjourned to meet to-morrow, Saturday, March 27, 1920, at 10.30 o'clock a. m.)

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Saturday, March 27, 1920.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman), presiding.

The CHAIRMAN. We will hear first, this morning, from Maj. Hodges, in regard to the item for the Bureau of Insular Affairs.

Gen. LORD. Mr. Chairman, before we proceed to that item, will you please turn to page 45 of the draft of the bill before you, referring to the statement submitted yesterday by Col. F. J. Morrow, on the appropriation, "Quartermaster supplies for military equipment of schools and colleges?" Col. Morrow was authorized by the Secretary of War to submit an estimate of \$3,220,000. He came before the committee and asked for an increase to \$4,120,000. That was in excess of the amount he was authorized to ask for by the Secretary of War, and I merely wish to get that fact in the record. The amount printed in the bill, \$3,220,000, was the amount authorized by the Secretary of War.

Now, if the committee will turn to page 47 of the tentative draft of the bill, relating to the statement made by Col. Wolf, representing the Surgeon General, the total in the bill before the committee is \$6,714,000. The Surgeon General was authorized by the Secretary of War to submit an estimate for \$4,834,800. I got in touch with the Surgeon General's office yesterday, realizing after adjournment, that he did not indicate the amount for which he was asking, and Col. Whitcomb, of the Surgeon General's office, notified me this morning that after studying the question the Medical Department submits an estimate of \$4,200,000 for an army of 175,000 men; for an army of 200,000 men, \$4,425,000; for an army of 225,000 men, \$4,650,000; and \$5,475,000 for the full enlisted strength authorized in the reorganization bill.

Mr. Chairman, you will find on page 48 the item for the Bureau of Insular Affairs. That is a very small item. Maj. Hodges is here and we would like to dispose of that now.

The CHAIRMAN. We will be glad to hear Maj. Hodges.

**STATEMENT OF MAJ. CAMPBELL B. HODGES, ASSISTANT TO
CHIEF, BUREAU OF INSULAR AFFAIRS.**

Maj. HODGES. Mr. Chairman, the items for the care of insane Filipino soldiers, and for the care of insane soldiers of the Porto Rico Regiment of Infantry, are items that have been carried in the Army appropriation bill for a number of years. For the fiscal year 1917 the amount used for the Philippines was \$803 and the amount used for Porto Rico was \$35; for the fiscal year 1918, the Philippine requirements amounted to \$803 and the requirements in Porto Rico amounted to \$39.50; for the fiscal year 1919, the amount used for the Filipino soldiers was \$952.60, and Porto Rico did not require anything. For the two quarters for the fiscal year 1920 we have already received bills for the Philippines amounting to \$762.85, and none from Porto Rico. Therefore, if we go at the same rate to the end of the fiscal year we will have a deficiency for the fiscal year 1920 in the case of the Filipinos. The chief of the bureau thought it would

be better if we could get an appropriation for the Filipinos of \$2,000 instead of \$1,000.

The CHAIRMAN. Have you any more troops in the Philippines now than you had at former times?

Maj. HODGES. We have about the same number of Philippine Scouts and this item concerns only the Philippine Scouts. They seem to be going crazy a little faster. For the first quarter of 1919 we had seven ex-scouts in the insane asylum, and for the last quarter, from October to December, we had nine ex-scouts. That is going to take about \$1,500 for the fiscal year 1920. In order to avoid a deficiency appropriation, which takes a lot of time and trouble, we ask for an appropriation of \$2,000 instead of \$1,000. The appropriation asked for Porto Rico is just the same as last year.

The CHAIRMAN. You have no insane soldiers of the Porto Rico Regiment of Infantry?

Maj. HODGES. There are none there now. The chances are that amount will not be used for Porto Rico.

The CHAIRMAN. The next item, on page 48, is under the Engineer Department, for "Engineer depots." We have been giving a nominal appropriation for that purpose recently so as to continue the draft of the paragraph in the bill. Is there any change in that situation?

ENGINEER DEPOTS.

STATEMENTS OF COL. MASON M. PATRICK, MAJ. G. E. EDGERTON, AND CAPT. E. H. MARKS, CORPS OF ENGINEERS.

Col. PATRICK. Yes, sir, there is a change that I would like to bring to your attention. It was taken up yesterday by letter, and I am authorized to say that a change has taken place in the administration of these depots. The engineer depot in Panama has been turned back to the Engineer Department to operate. The depot in the Philippines and the one at Honolulu will be turned back, likewise.

The CHAIRMAN. Do you mean they will be turned back to the Corps of Engineers?

Col. PATRICK. Yes, sir.

The CHAIRMAN. Who has been operating those depots up to this time?

Col. PATRICK. The Purchase and Storage Division has been operating those depots up to this time, but as they are outside the limits of the United States it is decided they shall be operated hereafter by the Engineers. So they have come back to the Engineers, and we will be compelled to ask for a good deal more than \$100, which was the amount appropriated last year for this item. For operating those depots for the year 1921 we are asking for \$22,000.

The CHAIRMAN. Can you segregate that amount and tell us how much you will require for each of these depots?

Col. PATRICK. Practically one-third of that sum for each of the three depots we expect to administer.

The CHAIRMAN. They all cost about the same amount?

Col. PATRICK. They will cost about the same, sir.

Mr. McKENZIE. What would the bulk of that money be expended for?

Col. PATRICK. For employees around the depots handling material, and all matters of that kind. There is an immense amount of engineer property in all of those depots, and these people would be em-

played in looking after it, caring for it, preserving it, and attending to shipments from place to place when needed.

The CHAIRMAN. The largest part of it is for the pay of employees?

Col. PATRICK. Practically all of it is for the pay of civilians who are employed for handling materials and for the administrative work of the depots.

The CHAIRMAN. The next item is for the engineer school. We appropriated \$50,000 last year for this item for the fiscal year 1920, and the estimate for the fiscal year 1921 is also for \$50,000, so there is no change in that item.

Col. PATRICK. No, sir; none.

The CHAIRMAN. Has all your appropriation for 1920 been expended or obligated?

Col. PATRICK. Every particle of it has been expended or obligated. It will be exhausted before the close of the fiscal year. The objects to which we expect to devote this appropriation for the next fiscal year are very plainly set forth in the item in the bill. The item has appeared in successive bills in practically the same form for several years. The amount of money asked for is urgently needed and it is not in excess of what will be definitely and specifically required.

The CHAIRMAN. How many students are at the engineer school at present?

Col. PATRICK. There are at present about 113, all told, who are taking the courses there now.

The CHAIRMAN. Will you have any decrease in that number of students during the coming fiscal year?

Col. PATRICK. The attendance at the school at present is somewhat abnormal.

The CHAIRMAN. That is what I understood.

Col. PATRICK. Due to the fact that certain of the younger officers did not complete their courses at West Point. There is the possibility that next year's classes will be somewhat smaller. But we have been pinched to get along with the \$50,000 with these classes this year. When I was in command of the school before the war my recollection is that the appropriation at that time when there was a very much smaller student personnel, was half as much as it is now, though we had then only about 25 student officers.

The CHAIRMAN. Is the bulk of that sum asked for also expended for salaries and wages? Can you, in revising your hearing after you get your transcript, segregate the amounts in that sum of \$50,000 so as to indicate how much you are asking for the principal items of expense in this appropriation?

Col. PATRICK. Yes, sir. I have here a list of the items in considerable detail.

The CHAIRMAN. You may insert that in the record.

(The list referred to is as follows:)

For purchase and repair of instruments, machinery, implements, models, and materials for the use of the school.....	\$9, 500
For purchase and binding of professional works and periodicals.....	2, 500
For incidental expenses of the school, including chemicals, stationery, hardware, machinery, operation of boats, etc.....	7, 000
For pay of civilian clerks, draftsmen, electricians, mechanics, boat crews, and laborers.....	21, 000
For unforseen expenses and for travel expenses for officers on journeys made for purposes of instruction.....	10, 000
Total.....	50, 000

Col. PATRICK. There is a slight change in the language of this item which we would like to have incorporated, if the committee will agree to it. It is merely a change in verbiage in order to clear up certain matters concerning which the auditor has raised questions in connection with these accounts. I have the language here. It is almost as long as the item itself. With the committee's permission, I would like to insert that in the record.

The CHAIRMAN. What is the principal change?

Col. PATRICK. The difference in the phraseology is shown in the proposed revised draft of the item which I will submit to the committee. We have underlined what is really the new or changed matter and lined out the matter to be omitted, and we want those changes to make plain what the appropriation may be used for. There is no question in regard to the amount. It is a mere question with the auditor as to the phraseology.

(The revised draft of the item referred to is as follows:)

Engineer school: For equipment and maintenance of the engineer school, including purchase and repair of instruments, machinery, implements, models, boats, and materials for the use of the school, and to provide means for the theoretical and practical instruction of Engineer officers and troops in their special duties, including construction, hydraulics, improvement of navigable waterways, fixed and floating bridges, pontoniering, signaling, surveying, printing, and various processes of map reproduction; for the printing, purchase, and binding of scientific and professional works, papers, and periodicals treating of military and scientific subjects, textbooks, and books of reference for the library for the use of the school, and for the temporary use of Engineer officers engaged on duties away from the engineer school; for incidental expenses of the school, including chemicals, stationery, supplies for the operation of machinery and power boats; for extra-duty pay to soldiers necessarily employed for periods of not less than 10 days as artificers on work in addition to and not strictly in line with their military duties, such as carpenters, blacksmiths, draftsmen, printers, lithographers, photographers, engine drivers, telegraph operators, teamsters, wheelwrights, masons, machinists, painters, overseers, and laborers; for pay of civilian clerks, draftsmen, electricians, mechanics, and laborers; for compensation for temporary technical or special services of civilian instructors and lecturers, and payment of tuition fees of student officers at civil technical institutions; for unforeseen expenses and for travel expenses of officers on journeys approved by the Secretary of War and made for the purpose of instruction: *Provided*, That the traveling expenses herein provided for shall be in lieu of mileage and other allowances, and for other absolutely necessary expenses, \$50,000: *Provided*, That section 3648, Revised Statutes, shall not apply to subscriptions for foreign and professional newspapers and periodicals to be paid for from this appropriation.

CONSTRUCTION, CAMP HUMPHREYS.

The CHAIRMAN. The next item is for "Buildings, engineer school, and college of military research, Camp A. A. Humphreys, Va.: For beginning the construction of permanent buildings for the engineer school and college of military research at Camp A. A. Humphreys, Va., at a total estimated cost not to exceed \$3,000,000, to be immediately available and to remain available until expended." You are asking for an appropriation of \$500,000 in this item for the fiscal year 1921. That is an entirely new item, and it is subject to a point of order, of course.

Col. PATRICK. Mr. Chairman, I may say with reference to that, the Chief of Engineers, as you know, has taken office only recently. I too, have been in his office only a short time. He asked me to say to you this morning that the notice of this hearing came very late yesterday afternoon and that is the reason I am here representing him, and he is unavoidably absent. In this connection with this

particular item he authorizes me to state that the reasons for the establishment of the school at Camp Humphreys were very extensively set forth before your committee some time last year by Gen. Black, and also in a letter written by the Secretary of War, which Gen. Black presented to the committee. Gen. Beach thinks that is as good a presentation as it would be possible for him to make now, and he requests that that testimony and the letter of the Secretary of War I have spoken of may be referred to in connection with the proposed appropriation for the engineer school as contained in this item.

Mr. McKENZIE. Colonel, I take it that the Congress of the United States has gone so far that it would be impossible to retrace our steps in connection with that permanent Engineer school at Camp Humphreys. There was a good deal of discussion before this committee as to the wisdom of abandoning the school here in the city of Washington, at the Washington Barracks, and utilizing those permanent buildings for the storage of old papers, and so forth, and going to the additional expense of building an entirely new plant at Camp Humphreys. However, that has gone by, and it seems we have started out on that road which will eventually require an expenditure of several millions of dollars.

No one has ever questioned the advisability of selecting that as a location; undoubtedly it is one of the best in the United States for that purpose. But, of course, you know, and every other man knows who has given the subject any thought at all, it is absolutely imperative for Congress to cut out every estimate and every appropriation asked for that we can possibly get along without.

The CHAIRMAN. Especially in reference to new construction.

Mr. McKENZIE. For a number of reasons, the condition of the labor market, the cost of material that goes into construction, and every other reason that one can think of as an argument against construction at this time by the Government.

Now, Colonel, you are a practical engineer. You are connected with this school, and the question I want to ask you now is, whether or not you do not think you can get along with the buildings and the equipment that you have at Camp A. A. Humphreys at least for another year, and let us get by without making this appropriation?

Col. PATRICK. Realizing, Mr. McKenzie, that precisely such a question would be asked this morning, I put it almost in your words to the Chief of Engineers before coming up here. He instructed me to say this in answer, that he had just been in communication with the Secretary of War, who felt very keenly that this was a worthy project, and who had instructed him, the Chief of Engineers, to urge upon this committee the making of this appropriation, if in their wisdom they could see the possibility of so doing.

Mr. McKENZIE. Well, it is true, the Secretary of War has given a good deal of thought to these matters. For example, he has urged that this committee appropriate several hundred thousand dollars for buying additional land at Fort Bliss, and a number of other things, and of course, I do not say but what they would all be advantageous to have, and valuable to have. But as practical men who have to face these problems and decide them it seems to me wherever we can get along, even if the Army has to suffer a little inconvenience, or the Navy, or any other governmental department, we ought to be willing

to put with a little inconvenience until our country gets back to at least something like normal conditions.

Col. PATRICK. I think all of us in the Army agree with that proposition.

The CHAIRMAN. Let me ask you in that very connection this question. I understand you did the construction work in France.

Col. PATRICK. I did have some of that work.

The CHAIRMAN. We know of the construction work that the Engineers have done in the past. You put up the Congressional Library Building and also the Washington Monument; you have put up various buildings in the past. Could the Engineer Corps, with their force down at Camp Humphreys, put up these buildings themselves?

Col. PATRICK. Not with the force they have there at the present time. That is, not with soldier labor; they could not do it. The Engineer Corps could, however, supervise all this building construction.

The CHAIRMAN. Would that result in a saving to the Government?

Col. PATRICK. If all the construction work were placed under the Corps of Engineers, that is, all the construction work for the Army, there would undoubtedly be a saving in overhead, and a very considerable saving.

Mr. McKENZIE. Of course, you will understand that my questions are not impelled by any desire that I might have to cripple the Corps of Engineers.

Col. PATRICK. I understand that thoroughly, Mr. McKenzie.

Mr. McKENZIE. If there is one branch of our Military Establishment that has commanded my admiration, along with the Infantry and Cavalry and Artillery, it is the Corps of Engineers, and I have long been a firm believer in not only the logic but the wisdom of putting all construction in the Military Establishment under the Corps of Engineers, where I believe it properly belongs, and I am only now asking these questions thinking of the financial situation in which we are confronted in the country.

Col. PATRICK. I understood that thoroughly, Mr. McKenzie, and my answer was based exactly upon the same lines as the question you asked.

The CHAIRMAN. Colonel, we will be glad to hear you on the item for engineer equipment of troops. You had an appropriation last year of \$300,000, for the current fiscal year. You are asking for \$731,000 for the fiscal year 1921, which is more than double the amount appropriated for the fiscal year 1920. What is the occasion for that large increase?

Col. PATRICK. I would like to ask the officer directly in charge of that matter, Maj. Edgerton, to answer your question.

The CHAIRMAN. I naturally supposed that as a result of the war you had a large surplus of that kind of material and that you would come here this year asking for a very much smaller appropriation. We will be glad to have an explanation of that by Maj. Edgerton.

Maj. EDGERTON. Mr. Chairman, the item for engineer equipment of troops, as it appears in the Book of Estimates, is based on the maintenance and replacement of equipment for 20 Infantry divisions and 1 Cavalry division, and it is based upon the supposition, which is almost if not entirely correct, that the initial equipment for those divisions is now on hand as the result of our requirements during the

war, so that the details of this item are merely for the repair and replacement of such parts of that equipment as will be worn out in training during the year. That estimate is based on from 12 to 36 per cent of the initial cost of those items. It is also based on the necessity of securing certain new classes of equipment, such as searchlights, sound-ranging apparatus, and flash-ranging apparatus, which are new developments brought out during the war, and for that item we have an estimate of \$270,000.

The CHAIRMAN. That is for the searchlights?

Maj. EDGERTON. No, sir; for maintenance, and so on.

The CHAIRMAN. That is on the basis of 21 divisions?

Maj. EDGERTON. Yes, sir.

The CHAIRMAN. Of course, the Army reorganization bill which we passed recently provides for nine divisions, so that, having that in mind, you could very materially reduce this estimate, could you not?

Maj. EDGERTON. Yes, sir; and on that basis we have prepared a similar estimate which amounts to \$110,000.

Mr. MCKENZIE. May I ask, in making up your estimate, have you estimated for full divisions?

Maj. EDGERTON. I may say in that connection that our equipment of divisions is not based upon the individual soldiers; it is based upon a certain amount of equipment used by the entire division. We furnish very little equipment used by a single man. It is a complete set used by the division, and if there is a sufficient number of men in the division to use it at all they use it all. So it is a function of the number of divisions, rather than the number of men.

Col. PATRICK. May I say, Mr. Chairman, that we have gone over this matter of equipment and have considered the different numbers of troops which there might be in the Army, and we have estimated for an Army of 175,000 men a certain sum of money, and we have estimated for 200,000 men a certain amount, and for 225,000 men a certain other amount. I can give you the sums for those three figures.

The CHAIRMAN. That would be helpful to the committee.

Col. PATRICK. For an army of 175,000 men our very carefully made estimate is \$234,255. That is for the entire engineer equipment of troops for an army of that size.

The CHAIRMAN. You say the amount for an army of 175,000 men is \$234,255?

Col. PATRICK. Yes, sir. For an army of 200,000 men we will require an appropriation of \$267,720. Should the army be placed at a strength of \$225,000 men we would need a proportionate increase, and the total amount for any army of that size would be \$301,185. For an army of 299,000 we would need \$401,580.

Mr. GREENE. May I ask you where the shades of percentage increases are placed? As long as the supply does not depend upon the number of persons in a division and is not on a per capita basis, where does the increase show itself?

Col. PATRICK. It is somewhat on a per capita basis. Going back to what Maj. Edgerton said, if there are more men there will be more divisions, of course, and more units to supply.

Mr. GREENE. But the proposition we are dealing with provides for a lay-down foundation plan of nine divisions, and they will be skel-tonized anyway. It would hardly be a tactical advantage to try

to make new divisions with an increase of ten or fifteen thousand enlistments, to try to make three or four more skeleton divisions. These divisions are going to be pretty well skeletonized with a 175,000 or 200,000 men, when you come to figure the staff troops.

Col. PATRICK. That is true.

The CHAIRMAN. Let me call your attention to the fact that Maj. Edgerton stated that you could get along with \$110,000 for nine divisions, as contemplated by the Army reorganization bill. On a basis of nine divisions for the Army right through, how much more could you reduce the item that we are now discussing?

Col. PATRICK. I have a table here which shows that.

(The table referred to is as follows:)

For an army of 175,000 men.....	\$234,255
For an army of 200,000 men.....	287,720
For an army of 225,000 men.....	301,185
For an army of 299,000 men.....	401,580

Mr. McKENZIE. I would like to ask Maj. Edgerton a question. Of course you have figured this according to divisions, and not, as you said, per man?

Maj. EDGERTON. Yes, sir.

Mr. McKENZIE. If you do that, and figure what is necessary for one division, it will be a very easy matter for us to multiply that by the number of divisions that we provide for.

Col. PATRICK. I can answer the chairman's question somewhat more clearly now. The \$110,000 was merely for the initial equipment for the Infantry and Cavalry divisions. The addition was made up of other items which do not form part of the divisional equipment, such as searchlights, which go with the Army, sound-ranging apparatus for the Artillery, instruments for flash-ranging work, and for the maintenance of all of this apparatus. Then for the Tank Corps we estimate that \$6,000 would be needed for its engineer equipment. All those items come in, so it makes up for this fiscal year the sums I have stated for an army the sizes given.

The CHAIRMAN. Will you kindly, when you revise your statement, give us the totals for these various items?

Col. PATRICK. Yes, sir; I will be glad to do that.

Estimate for engineer equipment of troops, army of 225,000.

For maintenance and replacement of basic divisional equipment.....	\$110,000
For maintenance and replacement of searchlights and sound and flash-ranging equipment.....	17,000
For engineer equipment of Tank Corps.....	6,000
For maintenance of engineer equipment for Reserve Officers Training Corps.....	27,185
For the development of engineer equipment.....	36,000
For the proportionate part of the salaries of employees of the military division.....	80,000
For miscellaneous and unforeseeable contingencies.....	25,000

Total..... 301,185

Similarly for an army of 299,000 men the sum needed would be \$401,580.

Mr. GREENE. Colonel, you enumerated, among other things, sound-range devices for Field Artillery. The Field Artillery services get these devices from you?

Col. PATRICK. We supply them. We assist in developing those devices and supply them to the Field Artillery, and they operate them.

Mr. GREENE. So that will come under the character of supplies, for instance, that are left with the particular arm not included in supplies bought by the Quartermaster Corps, because these are special and technical supplies?

Col. PATRICK. Yes, sir; because we are developing those for the Artillery.

Mr. GREENE. What is the effect upon the appropriation bill? If we appropriate the money for you to get them, will there later be a request from the Field Artillery for the authority, or will there be an accounting when they get them from you?

Col. PATRICK. They take them up on their property returns as having been transferred.

Mr. GREENE. So there is only this one money transaction involved in it?

Col. PATRICK. So far as I know that is correct, Mr. Greene.

The CHAIRMAN. Colonel, we will be glad to have your explanation on the item for "Civilian assistants to engineer officers," for which you are asking \$40,000. That is the same amount that was appropriated for the fiscal year 1920. Have you expended, or will you expend that total allowance?

Col. PATRICK. By the end of this fiscal year we will have expended every penny granted last year, and we could advantageously have expended a somewhat larger sum.

The CHAIRMAN. Could you give the committee an idea of how many civilian assistants you have?

Col. PATRICK. Yes, sir. Would it assist the committee if I outline rather briefly what the engineers of these departments have to do?

The CHAIRMAN. It would be very helpful.

Col. PATRICK. Under recent orders of the War Department there has been a great effort to decentralize, as you possibly know, and the Chief of Engineers has aided in that worthy object as well as he possibly could. We are putting at every department, of which there are six in the United States and one in Panama, one in Hawaii, and one in the Philippines, some of our most experienced officers, our highest ranking officers, men best fitted to act as department engineers. We are placing in their hands much more power than they ever had before. We are making them responsible for all military engineering operations in their departments. They are to give engineering advice to the department commanders, they are to make all of the plans for railroads, roads, water supply, and all other engineer activities in each of the departments. They are to have charge of the storage and issue of all maps used by each department, and they keep a record of all important engineer supplies. That means not only those owned by the Army, but those that can be obtained readily from civilian sources. That is, so to speak, an industrial inventory.

They also have charge of the vocational training of all troops in their department, and the military training of Engineer troops and of the reserve officers, and they keep engineer records of all Engineer soldiers furloughed from the Army. They must have a small skeleton force that can be expanded in time of emergency.

The CHAIRMAN. Of course, under existing law no enlisted men are furloughed to the reserve.

Col. PATRICK. Yes, sir.

The CHAIRMAN. Because reserves are practically abolished and so there will not be much work along that line.

Col. PATRICK. No, sir. The total number of employees we have is 44 civilian assistants to these department engineers. It is really nothing more than a skeleton force. The amount of money available is less than \$1,000 per man.

The CHAIRMAN. Of course, they are largely employed in river and harbor work, are they not?

Col. PATRICK. No, sir; they have absolutely nothing whatever to do with river and harbor work. They have nothing but military duty, and they do not touch river and harbor work.

I would like to add that it is the intention of the Chief of Engineers to turn over to the department engineers the control of and possibly the execution of all harbor defense work, which will increase their duties and their responsibilities. I would like to make a very earnest plea for a somewhat larger sum for the coming year, in view of the added duties we have placed upon the department engineers. If, instead of having an appropriation of \$40,000, we could go back to what we had in 1917 and 1918, and obtain an appropriation of \$75,000, I can assure you that every dollar of that amount will be advantageously expended.

The CHAIRMAN. Of course, as Mr. McKenzie indicated to you, we have a very serious problem confronting us. There seems to be a deficit of \$3,000,000,000 that stares us in the face for this coming fiscal year. In cutting our cloth accordingly we shall have to prune to the bone everywhere.

Col. PATRICK. That is the reason why I am making no plea for any increase and urging no appropriation that I do not think is absolutely essential. I do not know any way in which the \$35,000 additional could be expended to greater advantage to the United States than for this particular item.

The CHAIRMAN. We recognize the splendid work the Corps of Engineers are doing, of course.

The next item is for "Engineer operations in the field." The amount appropriated for that item for the current fiscal year was \$3,000,000. You are asking for a like amount for the fiscal year 1921. The engineer operations in the field, as I recall, were in connection with engineer problems with the armies in the field of operations and with the troops in the war. Would you require such a large amount in peace times? I recall that a large amount of this was in connection with the storage of material and the rental of property for storage. Will you require so large an amount for the next fiscal year?

Col. PATRICK. I do not think we will be justified, sir, in making any decrease in that amount asked for there. The estimate is intended to provide for the expenditure for engineer material used in training troops and to provide such materials as barbed wire, lumber, sand bags, cement, and the like for use in mining operations, sapping construction and field fortifications, and matters of that kind.

The CHAIRMAN. But this \$3,000,000 was appropriated for the use of a military force that would average, during the fiscal year now near closing, 325,000 men. If the committee should decide to appropriate for an Army of 175,000 men or 200,000 men, the amount of material that you would require for such an Army could be materially reduced, could it not?

Col. PATRICK. I think it could be somewhat reduced in proportion to the number of men in the Army; yes, sir.

The CHAIRMAN. Say we had an Army of 175,000 enlisted men, how much, in your opinion, could you get along with for the fiscal year 1921?

Col. PATRICK. For an Army of 175,000 enlisted men we could get along with about one-third of that total.

The CHAIRMAN. That is 1,000,000 instead of 3,000,000?

Col. PATRICK. I can give it to you for these different figures of the size of the Army. The amount estimated for an Army of 175,000 enlisted men is \$1,017,852.50. Should the Army consist of 200,000 enlisted men the figure would be \$1,163,260, and for an Army of 225,000 men the figure would be \$1,308,667.50. For an Army of 299,000 men the figure would be \$1,744,890.

Mr. McKENZIE. I wanted to ask the colonel about some of these supplies. You spoke of barbed wire and other material of that character. There is plenty of that on hand, is there not?

Maj. EDGERTON. We have some barbed wire on hand; yes, sir. I could not tell you definitely the exact quantities, but the quantities on hand are definitely considered in making up these estimates.

Mr. McKENZIE. In regard to the construction and rental of storehouses within and outside of the District of Columbia, how much have you expended this year for rentals up to this time?

Col. PATRICK. Nothing has been expended for rentals from this year's appropriation, as all storage has been under the Director of Purchase and Storage.

Mr. McKENZIE. You are not constructing any storehouses at the present time?

Col. PATRICK. No, sir; none at all. May I have the privilege of leaving with you the proposed wording of this particular item?

The CHAIRMAN. We will be glad to have that. You might read it to us.

Col. PATRICK. It changes the verbiage very slightly. It reads:

For expenses incident to military engineer operations in the field, including the purchase of material and a reserve of material for such operations, the construction or rental of storehouses within and outside the District of Columbia, the purchase, operation, maintenance, and repair of horse-drawn and motor-propelled passenger-carrying vehicles, and such expenses as are ordinarily provided for under appropriations for "Engineer depots," "Civilian assistants to engineer officers," and "Maps, War Department": *Provided*, That when to the interest of the Government funds appropriated under this head may be used for the purchase of options on material for use in engineer operations in the field.

The CHAIRMAN. It does not attempt to add any additional items to this paragraph, that will require additional appropriations?

Col. PATRICK. It will require no additional appropriation. It does give an additional authorization, and it does provide for the purchase, operation, and maintenance of certain vehicles. There is also a proviso, "*Provided*, That when to the interests of the Government, funds appropriated under this head may be used for the purchase of options on material for use in engineer operations in the field." I would like to explain that.

The CHAIRMAN. I think we have that in the printed bill, and I was going to ask you about that. You have submitted in the printed bill, this language:

"Provided, That when to the interests of the Government funds appropriated under this head may be used for the purchase of options on material for use in engineer operations in the field."

What is the necessity for that language, and why do you wish to secure options?

Col. PATRICK. To prevent profiteering, for one thing, Mr. Chairman. If we anticipate that there may be certain operations in the field we would go into the market and find out just what materials are available that we may need, and we say to a dealer, "We would like to secure at your present prices certain quantities of material for our use. We will pay you a moderate sum to hold these things for a certain length of time in case we should need them."

Moreover, when there exists a temporary doubt whether a certain material will be needed, taking an option will insure its possession if events do warrant its acquirement; while, if it is subsequently found that the material will not be required, we shall avoid the needless expenditure of the purchase price.

The CHAIRMAN. What is the percentage of gain to the Government? Do you think you could make some gain under such a provision?

Col. PATRICK. It would be the difference between the amount we would pay at the option price and the amount the dealer might otherwise demand. That is so indefinite I can not answer otherwise.

The CHAIRMAN. Then this is really proposed as a war time or emergency provision?

Col. PATRICK. It is, sir.

The CHAIRMAN. In that very connection, did you find when we got into the World War that prices materially increased; that is, prices for the commodities you had to secure for the Army?

Col. PATRICK. I went to France very early and was not in this country, and I have no personal knowledge about that, but I know prices did increase. I am not going to say they increased unduly, but there was a notable increase in the price of nearly everything we had to use.

The CHAIRMAN. You think this language would prevent such a condition in the future?

Col. PATRICK. I think that language would prevent an unwarranted increase. I do not think for a moment that it would permit us to get our goods at a price lower than it costs to produce them.

Mr. GREENE. Have you been retaining, or are you retaining, a surplus of articles you will require for engineering operations in the field so that you will be able to get along for a number of years without the purchase of large quantities of such material?

Col. PATRICK. No, sir; we are not adopting that policy at all, because we think that would be uneconomical.

Mr. GREENE. Would the material depreciate in value?

Col. PATRICK. The material would deteriorate in time, and, furthermore, by declaring it surplus and selling it at present market prices we can obtain a very good return and possibly can purchase those same items years later at a lesser price. It is, of course, impossible to predict what the future prices will be. We think it will be wiser to dispose of the material now.

Mr. McKENZIE. As far as prices are concerned, this sort of a provision would only affect the property upon which you hold an option.

Col. PATRICK. Absolutely.

Mr. MCKENZIE. Everything else would go out?

Col. PATRICK. Certainly.

Mr. MCKENZIE. Personally, I favor legislation put on our statute books that will make it possible that upon the declaration of war automatically prices become fixed and subject to the war powers of the Government, and can only be changed by legislation.

Col. PATRICK. If that should be the law, we would not want this provision.

The CHAIRMAN. I think every Member of Congress, regardless of his political status would like to prevent profiteering at the expense of the Nation which protects all of us by the men who sent prices sky high at the outbreak of this war.

Mr. FIELDS. You have been receiving market prices for the articles you have disposed of, have you?

Col. PATRICK. Practically so; yes, sir.

Mr. FIELDS. In taking options, what per cent of the original cost price would you give as an option?

Col. PATRICK. I could not name a percentage right now. It depends upon the commodity, and it depends upon so many matters that I do not think we could say as to that, but it would be a relatively small sum.

Mr. FIELDS. You have no fixed sum in mind?

Col. PATRICK. Nothing in mind at all. It might be a dollar, or it might be a number of dollars.

Mr. FIELDS. At present, the percentage you would fix would depend largely upon whether you were positive that you would actually need the commodity. If you knew you would need it you could afford to give a greater percentage of its cost price, if there was a question as to whether or not you would likely be unable to get it.

Col. PATRICK. Certainly, and we would have that sum apply on the purchase price.

Mr. GREENE. It has been suggested that this language only contemplates such stores as we might need during a war or a state of emergency. What is your experience in regard to maneuvers or other demonstrations on a somewhat larger scale in peace times? Is not the market rather monopolized by enterprising, shrewd men?

Col. PATRICK. There is that possibility, and I think we would be fairly justified in taking advantage of that provision.

Mr. GREENE. What is the experience of the Army with regard to the matter of living expenses wherever the Army goes?

Col. PATRICK. They go up.

Mr. GREENE. Everywhere the Army goes, prices go with it?

Col. PATRICK. It is like the Constitution following the flag.

Mr. GREENE. Therefore why should this be limited in its operation to any war-time attempt to swindle the Government?

Col. PATRICK. The language does not limit it to war-time operations. We would take particular advantage of it in war time.

The CHAIRMAN. It might be well for the committee to consider it as a general proposition, affecting all branches of the Army.

Mr. GREENE. It has been known to exist so long that it has passed into a sort of tradition and a jest, but it is a sad commentary on patriotism that somewhere or another is supposed to be worth fighting

for, that just the minute the men who are to take the first risk present themselves, up go prices, and money is taken out of their pockets. It is a shame and a disgrace.

The CHAIRMAN. The next item is, "Contingencies, Engineer Department, Philippine Islands." You are asking for the same amount in this bill that you received in the last appropriation act, that is \$2,500?

Col. PATRICK. Yes, sir; we are asking for the same amount.

The CHAIRMAN. Are you expending the entire amount?

Col. PATRICK. I think we have expended every particle of it. It is a very small amount, only \$2,500, and it is found that in the work in the Philippines we have been able to spend it very advantageously.

The CHAIRMAN. The next item is for "Military surveys and maps." You are asking for a similar amount this year that you received for the fiscal year 1920, that is, \$200,000. What progress are you making with that work?

Col. PATRICK. I am going to ask Capt. Marks, who is specially in charge of that work, to answer your questions about that.

Capt. MARKS. Mr. Chairman, this subject of military map making must be taken into consideration in connection with mapping the country as a whole. We try to work in cooperation and coordination with all Government agencies engaged in map work, and so when I refer to the status of map making in the country, it is not only in connection with the maps of particular value to the Army, but of value to the country as a whole. On this map here, the brown areas are areas which have been mapped fairly satisfactorily up to the present time, either by the Army or some one of the civil agencies. The area in yellow is where work is in progress at the present time. Those areas in all cases are being worked on by the Army, or with funds under the terms of the appropriation turned over to one of the civil bureaus.

Map work of the United States is very slow. Various governmental agencies have been at work over forty years, and they have only completed slightly over 40 per cent of the area of the United States, leaving 60 per cent to be completed. The areas of particular importance that have yet to be completed, from the standpoint of national defense, are the south Atlantic coast from Virginia through North Carolina, and until we run into the yellow area, where we are at work now. That country should be mapped back for a distance of 150 miles from the coast.

The Mexican Gulf coast is not quite so important from a military standpoint, but it should not be neglected in future years. The Canadian border along the eastern part of the lakes is pretty well mapped. The Canadian border further west is almost unmapped.

The CHAIRMAN. What are the blue areas?

Capt. MARKS. They are some compilations we did during the war. The Reclamation Service and the General Land Office, and other bureaus have done a little bit here and a little bit there, and during the war, when we had some men at our disposal we compiled all this information, which makes a map of a sort, but it is not a finished map. That is an activity which we stopped at the end of the war.

Mr. GREENE. You referred to an area which should be mapped back to 150 miles from the coast into the interior. Really as a matter of strict national defense policy there is not an inch of the surface of our country that should not be mapped?

Capt. MARKS. From the standpoint of national defense we can never be prepared properly until the whole country is mapped.

Mr. GREENE. Nobody can predict, in case of war, how far the war activities may extend toward the interior.

Capt. MARKS. The war, of course, may extend any place. We merely show the most likely areas and tried to get that work completed first. The Geological Survey is tied up in this appropriation with the question of State operation, and they are working primarily in areas of commercial or geological importance. For instance, North Carolina might not be important from a geological standpoint, and perhaps the State of North Carolina might not care whether their State was ever mapped. Then we will give the Geological Survey the funds to go in there and do the map work. We are not trying to operate in opposition to any other governmental bureau, but we want the control of funds that we can put on this work.

Mr. MCKENZIE. Are you concentrating your energies along the Atlantic and Pacific coasts?

Capt. MARKS. We are. At the outbreak of the present war, the first time we ever had a military survey appropriation, on the entire Atlantic coast, from Virginia to the mouth of the Mississippi River, there was not a map along the whole coast. This entire brown area along here [indicating on map] has been done since 1917.

Mr. MCKENZIE. You are not spending any of this money in having maps made of Iowa or Illinois?

Capt. MARKS. It might come up in this way, that in some of the industrial emergency work, when the industrial disturbances occurred in the Middle West, we had to spend money to purchase maps in West Virginia for the use of our men who went in there. We are limiting the work to within a hundred miles of the coast, and at the present time we are doing work on the Atlantic and Pacific coasts rather than the other parts of the country. I might say also that besides doing work within the continental limits of the United States we have done some map work in the Philippines, in Panama, and in Hawaii, for the same reasons.

The CHAIRMAN. And in Porto Rico?

Capt. MARKS. We have not done any in Porto Rico.

The CHAIRMAN. They had a great deal of work done there by the Spaniards before we acquired Porto Rico.

Capt. MARKS. We have all that information.

The CHAIRMAN. I should imagine that you had plenty of information regarding those possessions.

Capt. MARKS. We have all there is, and it will serve for the present.

The CHAIRMAN. Are you asking any of this appropriation for perfecting the maps of the country along the Mexican border?

Capt. MARKS. We have used some for that purpose, but the Mexican border is pretty well covered now, and I do not think it will be necessary to use any of the appropriation for the next fiscal year for that purpose.

Mr. FIELDS. I see you have cut out some on the Mexican border.

Capt. MARKS. We have some parties out there now. We have some parties trying to do aerial photography, and we are using some of it for that purpose.

The CHAIRMAN. You are using the map that is furnished by the Geological Survey and the Coast and Geodetic Survey, and you superimpose your information on those maps?

Capt. MARKS. Yes, sir.

The CHAIRMAN. How much of the appropriation of \$200,000 that we gave you for the current fiscal year have you expended or obligated?

Capt. MARKS. That was all obligated by the 1st of last December.

The CHAIRMAN. So you will have no balance?

Capt. MARKS. If we do have, it will be because of some matter we can not close out on the 30th of June.

Gen. LORD. The records show unobligated on March 24, \$60,485. That is not obligated on the books of the Director of Finance.

Capt. MARKS. The Director of the Geological Survey was promised more than a year ago by the Chief of Engineers that he would ask that amount of work to be done.

Gen. LORD. You have made a reservation to cover that contingency?

Capt. MARKS. Yes.

Mr. FIELDS. What percentage of your work is done by the other branches of the Government?

* Capt. MARKS. This year we obligated \$115,000 to other branches of the Government, and the remaining \$85,000 was spent in our own activities in preparing confidential additions to maps and in work in the Philippines, Hawaii, and Panama.

Mr. FIELDS. The other branches of the Government operate under appropriations of their own, do they not?

Capt. MARKS. Yes. The Coast and Geodetic Survey has a statutory force of employees. The Geological Survey operates on a lump-sum appropriation from year to year, but their operations do not necessarily take the military point of view alone into consideration. They have a lot of commercial considerations, as well.

The CHAIRMAN. Of course, this item has raised points of order in the past in the House; it went out once or twice on points of order. Any information you give us about this work is very useful in defending the item when the Senate puts it back on the appropriation bill. So we will be very much obliged to you for any information you can give us.

Col. PATRICK. May I add a word in reference to the phraseology I am leaving with the committee? It is my understanding that the slight change desired in the phraseology of the item making appropriations for engineering operations in the field has been definitely approved by the War Department. I will verify that, however, and correct my statement if I find it is incorrect.

Gen. LORD. That statement is correct; it has been approved by the War Department.

Col. PATRICK. So far as the phraseology for the engineer school appropriation is concerned, my understanding is that we were told to use the old phraseology, that we could explain to the committee, as I have endeavored to do, the reason for the desired changes, and that would be taken up by the War Department, to get their approval.

The CHAIRMAN. That is in reference to the school at Camp Humphreys?

Col. PATRICK. Yes, sir; that is in reference to the changes in the wording of the item in regard to the engineer school.

PAY OF THE ARMY.

The CHAIRMAN. We will now take up the items for pay of the Army, beginning on page 14.

Gen. LORD. Mr. Chairman, the total appropriation for the fiscal year 1920 for pay of the Army was \$211,929,107. The unexpended balance under date of March 24 was \$57,060,187.86. Maj. MacKay will explain the estimate submitted.

The CHAIRMAN. The unexpended balance is how much?

Gen. LORD. The unexpended balance on March 24 was \$57,060,187.86.

The CHAIRMAN. Will all of that be expended by the end of the fiscal year?

Gen. LORD. It will all be expended, and approximately \$40,000,000 more.

The CHAIRMAN. Your deficiency item will be about \$40,000,000?

Gen. LORD. Approximately \$40,000,000; probably something less.

The CHAIRMAN. You are able to cut down that deficiency very considerably?

Gen. LORD. If we had submitted a deficiency estimate in December, we would have called for more than \$50,000,000.

The CHAIRMAN. What is the reason for cutting down the deficiency? Are men going out of the service?

Gen. LORD. The fact is that the average strength for the year will be less than the average strength estimated at that time. The agreed average strength for 1920, when the estimate for 1920 was submitted, was 325,000, and the estimate was submitted on that basis, a very close, careful estimate. The amount submitted was reduced on the floor of the House, and was finally reduced in the final conference report, on presentation of which the chairman of this committee and the chairman of the Senate Committee on Military Affairs announced that they were satisfied that the amount appropriated was insufficient, and that the Director of Finance would be before Congress by December with a deficiency estimate.

The CHAIRMAN. Can you tell us, for the purpose of the record, how many enlisted men you have in the Army now, and how many officers? If you will put in those figures up to date, when you receive the transcript of your hearing, the committee will appreciate it very much.

(The statement referred to is as follows:)

Weekly Statistical Report No. 135, dated Mar. 27, 1920, shows the following as the estimated strength of the Army on Mar. 23, 1920.

	Officers.	Men.	Total.
United States.....	15,060	167,439	182,499
Philippines.....	692	18,860	19,552
Germany ¹	726	16,756	17,482
Hawaii.....	204	3,625	3,829
Panama.....	195	3,601	3,796
Siberia.....	184	1,815	1,999
Porto Rico.....	54	1,526	1,580
China.....	47	1,318	1,365
Alaska.....	20	871	891
France.....	73	5	78
England.....	19	12	31
At sea, en route to United States.....	73	2,158	2,231
At sea, en route to Panama.....	10	839	849
At sea, en route to Europe.....	8	3	11
Total.....	17,365	218,828	236,193

¹ Includes all troops under jurisdiction of commanding general, American forces in Germany.

Lieut. MACKEY. Yes, sir. This estimate, Mr. Chairman, is made on an average strength throughout the year of 175,000 enlisted men, 16,042 officers, and 1,517 warrant officers. The 16,042 officers is 90 per cent of the maximum strength authorized by the Army reorganization bill that passed the House a few days ago.

The CHAIRMAN. You find that about 10 per cent of the total number of officers authorized is open to appointment?

Lieut. MACKEY. Yes, sir; that number of places is unfilled under present conditions. That is our estimate as to what will be unfilled.

Mr. MCKENZIE. Has not experience demonstrated that there is a continuous percentage of 10 per cent of vacancies?

Lieut. MACKEY. No; that is hardly correct, but under present conditions it will amount to about 10 per cent for 1921.

The first item printed in the committee print is \$30,299,150. According to our estimate that amount should be \$23,165,230. That is for pay of officers of the line.

The CHAIRMAN. How many officers of the line are you estimating for?

Lieut. MACKEY. We are estimating for 9,688 officers of the line. The Army in its maximum strength, as provided by the Army reorganization bill, consists of 17,825 officers and 10,073 of these are in the line. The proportionate number in the reduced Army will be, as I have said, 9,658 officers of the line.

The CHAIRMAN. The next item is for pay of officers of the Staff Corps and departments.

Lieut. MACKEY. The amount estimated under that item is \$15,294,915.

The CHAIRMAN. How many officers are you estimating for?

Lieut. MACKEY. We are estimating for 6,384 officers.

The CHAIRMAN. The next item is for pay of officers of the National Guard.

Lieut. MACKEY. The next item carries an amount of \$100, for pay of officers of the National Guard. This is a nominal amount to be carried, so that the appropriation, "Pay of the Army," may be available, should the National Guard be called into the Federal service. The armory drill pay is carried under another item of this bill, under the appropriation "Arming, equipping, and training the National Guard."

The CHAIRMAN. I wish, when you revise your statement you would kindly put the details of the estimates into the hearing, concerning each of these items.

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. I see you have the matter worked out in splendid shape.

Mr. MCKENZIE. Your next item is for pay of officers of the Officers Reserve Corps. What amount do you estimate for that?

Lieut. MACKEY. The amount estimated for that item is \$3,627,104.

The CHAIRMAN. For how many officers?

Lieut. MACKEY. That is for 35,000 officers for the two weeks period of training given to reserve officers, and for 275 officers of the Medical Section for the entire year.

The CHAIRMAN. When is that training camp to be held?

Lieut. MACKEY. They are not training camps.

The CHAIRMAN. I understand. This is for officers in the Reserve Corps. Is there to be a diminution of those officers?

Lieut. MACKAY. It is estimated that there will be approximately 100,000 officers in the Reserve Corps, and that one-third of them will be assigned to duty each year. That would be approximately 33,000 officers, and this estimate is based on 35,000 officers.

The CHAIRMAN. The 35,000 officers include the Medical Corps?

Lieut. MACKAY. No, sir; it does not include the Medical Section.

Mr. MCKENZIE. Do you expect that quite a number of officers who have made application for permanent commissions in the Regular Army, when they find they can not get appointments, there being twenty odd thousand applications and about 8,000 vacancies—do you expect that quite a number of those will go into the Reserve Corps?

Lieut. MACKAY. I am really not informed about that; I could not say.

Mr. GREENE. Is this expectation of 35,000 reserve officers that will go for training in this camp based upon anything like reliable information? Is it merely conjecture?

Lieut. MACKAY. Those are War Department figures, figures furnished by the War Plans Division of the General Staff.

Mr. GREENE. Of course the law, as I recall it, provides that they may be ordered to duty for a period not exceeding 15 days. Does the policy of the War Department contemplate an arbitrary selection of men to such service, with an order requiring their obedience, or is it more or less filled up by some little tactful preparation of the way to find out whether a man wants to be ordered or not?

Lieut. MACKAY. I should imagine the desire of the officer would be taken into consideration.

Mr. GREENE. Inasmuch as it is somewhat of an experimental thing and has to run along with popular enthusiasm to sustain the reserve idea, it must be more or less voluntary. Taking that into consideration, I wondered whether the War Department was quite prepared to expect 35,000 men anyway.

Lieut. MACKAY. The total number of reserve officers on February 29 was 64,436.

Mr. GREENE. But it comes to this, that of course if the War Department were to exercise its undoubted authority it might summon the necessary proportion of men to the colors for this camp and they would be required under military law to obey the order. If they proceed on that basis, they can, of course, very accurately predetermine the number of men who would go to the camps. The men would have no other option than to obey the order or resign; but if they proceed on the more or less persuasive system it seems to me the number would be indeterminate.

Lieut. MACKAY. The estimate is 35,000.

Mr. GREENE. That is why I wanted to know whether it was based on anything like a fairly reliable canvass beforehand or whether they were going to use their authority to compel.

Gen. LORD. If we can ascertain any information along that line, we will insert it in the record.

(Following is the statement referred to:)

[First indorsement.]

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,

March 30, 1920.

To the OFFICE OF THE DIRECTOR OF FINANCE,
Washington, D. C.:

It is intended to use these funds for the payment of reserve officers on duty as students at service schools and on other duties, such as boards or special work of various kinds. It is intended to call all reserve officers for training during 1921, and, in addition to those at schools, etc., it is estimated that some 30,000 will be called prior to June 30, 1921.

P. C. HARRIS,
The Adjutant General.

The CHAIRMAN. The next item is for pay of warrant officers and the mine-planter service.

Lieut. MACKEY. The amount estimated for that item is \$2,060,280.

The CHAIRMAN. That is due to the creation of the grade of warrant officer in the reorganization bill.

Lieut. MACKEY. Yes; and also 100 warrant officers in the Army mine-planter service. The average pay is \$1,325.17, making the amount estimated for the 1,517 men. It is estimated that 90 per cent of the number authorized in the reorganization bill would be warranted, as in the case of the commissioned officers.

The CHAIRMAN. The next item is for pay of officers of the Bureau of Insular Affairs; that is statutory.

Lieut. MACKEY. The next item in the print is for pay of officers for the Bureau of Insular Affairs. As the reorganization bill makes that a staff department, this item has been included in the second item in the bill.

The CHAIRMAN. So this item can be stricken out?

Lieut. MACKEY. This item can be stricken out; yes, sir.

The CHAIRMAN. The next item is for aviation increase to officers of the Air Service.

Lieut. MACKEY. The amount for the item for aviation increase is \$1,595,376.

The CHAIRMAN. Why the increase?

Lieut. MACKEY. It is estimated that 85 per cent, or 1,158 officers of the Air Service will be on duty requiring aerial flights, and 85 per cent of that number will receive the increase of half pay which is provided in the reorganization bill, and that will give us the figures I have mentioned. This increase for aviation in the reorganization bill is slightly more than that provided by the national defense act. In the national defense act there is provision for military aviators with 75 per cent additional, and for junior aviators with 50 per cent additional, but the bulk of the aviation officers get 25 per cent, so that accounts for the increase in this item.

The CHAIRMAN. Do you think they will have the full 85 per cent of officers in the Aviation Corps during the fiscal year 1921?

Lieut. MACKEY. I have applied the 90 per cent rule, and 85 per cent of the 90 per cent, I estimate, will be there.

The CHAIRMAN. The next item is for pay of officers of the Philippine Scouts.

Lieut. MACKEY. They have been included in the item for pay of officers of the line.

The CHAIRMAN. So this item can be eliminated?

Lieut. MACKEY. This item can be eliminated; yes, sir.

The CHAIRMAN. The next item is for additional pay to officers for length of service.

Lieut. MACKEY. The amount for the item for additional pay to officers for length of service at \$6,170,708.

Mr. GREENE. You say you have included the pay for officers of the Philippine Scouts in the item for pay of the officers of the line. The reorganization bill does not contemplate, if it becomes law, putting those officers into the Regular Establishment?

Lieut. MACKEY. It contemplates making them officers—

Mr. GREENE. It does eventually, but under present conditions there are some holdovers.

Lieut. MACKEY. There will be some holdovers, but these items are interchangeable.

Mr. GREENE. That may be; but I was only thinking that ultimately we have got to arrive at some more or less concrete idea to determine what the Philippine items are costing.

The CHAIRMAN. The fogey pay item is \$6,170,708?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. How do you arrive at those figures?

Lieut. MACKEY. I estimated that all of the colonels and lieutenant colonels would have 20 years' service, the majors over 15 years of service, and the captains would have an average of $7\frac{1}{2}$ years of service, and the first lieutenants would have an average of $2\frac{1}{2}$ years, and that the second lieutenants would have no service. So that would give an increase to first lieutenants of 5 per cent on their pay, to captains 15 per cent, and so on. By making the necessary extensions it is found on that basis that the cost will be just as I have shown here.

Mr. GREENE. That, however, is not a fixed percentage of fogey pay because fogey pay is 10 per cent.

Lieut. MACKEY. Yes, sir.

Mr. GREENE. That is simply your method of arriving at the totals.

Lieut. MACKEY. In other words, I figure that 50 per cent of the first lieutenants will be entitled to 10 per cent.

Mr. GREENE. They do not get anything until they get that?

Lieut. MACKEY. Exactly.

The CHAIRMAN. The next item is for paying of enlisted men of the line.

Lieut. MACKEY. The amount for that item is \$62,919,391.

The CHAIRMAN. That is based on an enlisted strength of 175,000 men?

Lieut. MACKEY. Yes, sir; this is for the proportionate number of the enlisted men in the line for an Army of 175,000 enlisted men, or for 134,312 enlisted men of the line. It is figured on the rates of pay provided by the reorganization bill.

The CHAIRMAN. That is a little increase over the amounts paid under existing law?

Lieut. MACKEY. Yes, sir; the average pay for a year is \$448.19—that is, the average base pay of an enlisted man.

The CHAIRMAN. That is a year's pay?

Lieut. MACKEY. That is a year's pay. Under the national-defense act the average yearly base pay is \$405.53.

The CHAIRMAN. The next item is for pay of enlisted men in the National Guard.

Lieut. MACKEY. That item is estimated at \$100—simply a nominal amount to keep the appropriation alive.

The CHAIRMAN. The next item is for pay of enlisted men of the Staff Corps and departments.

Lieut. MACKEY. The amount estimated for that item is \$18,462,405.

The CHAIRMAN. That is based on how many men?

Lieut. MACKEY. In the total authorized strength of 299,000 provided by the reorganization bill, 69,500 will be in the Staff Corps and departments.

The CHAIRMAN. I mean for an Army of 175,000 men.

Lieut. MACKEY. The proportionate number would be 40,688.

The CHAIRMAN. Is the amount you mentioned, \$18,642,405, for those men?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. The next item is for pay of enlisted men of the Regular Army reserves.

Lieut. MACKEY. That is abolished.

The CHAIRMAN. The next item is for pay of enlisted men of the enlisted Reserve Corps.

Lieut. MACKEY. That is estimated at \$100. That is simply a nominal amount.

The CHAIRMAN. The next item is for aviation increase to enlisted men of the Air Service. What is the amount of that item?

Lieut. MACKEY. The amount for that item is \$192,726.

The CHAIRMAN. How many men are entitled to that?

Lieut. MACKEY. It is estimated that 10 per cent of the enlisted men of the Air Service will be on duty requiring flights, and on that basis it is figured that 860 enlisted men will become entitled to an increase of half pay, which is the amount I gave you.

The CHAIRMAN. The next item is for pay of the enlisted men of the Philippine Scouts.

Lieut. MACKEY. The amount for that item is \$1,226,430.

The CHAIRMAN. Do you expend all of that?

Lieut. MACKEY. That is for 8,443 enlisted men.

The CHAIRMAN. And is that the strength you ask for, 8,443 men?

Lieut. MACKEY. The Philippine Scouts are pretty well filled up, and the number may be an amount slightly less than this, but not much. There will not be any material decrease.

The CHAIRMAN. How much have you unexpended and unobligated for this fiscal year, Gen. Lord?

Gen. LORD. All of the funds are interchangeable. Sometimes this is not quite enough and sometimes it is a little less. This is a very conservative estimate.

The CHAIRMAN. The next item is for additional pay for length of service to enlisted men.

Lieut. MACKEY. The amount for that item is estimated at \$3,500,000, and is figured on a basis of \$20 per man per year. The reorganization bill provides a change in the system of service pay. It provides that they get 10 per cent after five years' service and not have the increase determined by enlistment periods as it is now. The average per capita cost during 1916 was \$32.52. I estimate it this year at \$20 per man.

The CHAIRMAN. How many men have you who are receiving additional pay? I suppose you can not estimate that carefully?

Lieut. MACKAY. I do not know about that.

The CHAIRMAN. Of course, I have in mind trying to get for the information of the House the number of men who are at present in the Army for more than one enlistment.

Lieut. MACKAY. I will try to get that and put it in the record.

The CHAIRMAN. It will be interesting to the House and to the committee to know how many men reenlist in the Army and contemplate possibly making service with the forces their life work.

Lieut. MACKAY. I will get that information for you if it is available.

MARCH 30, 1920.

From: The Adjutant General of the Army.

To: The Director of Finance (Room 3016, Munitions Building).

Subject: Prior service of enlisted men now in the service.

1. In response to your letter of March 29, 1920, File No. FEA-1, requesting for the House Military Committee, information showing the length of service of enlisted men now in the Army, I am directed by the Secretary of War to inform you that of the 190,963 men enlisted in the Regular Army since February 28, 1919, 95,815 were former soldiers who reenlisted within three months from discharge; 21,651 were former soldiers who did not reenlist within three months from discharge; and 73,497 were men who had no previous service in the Army.

2. No compilation has been made in this office showing the length of service of enlisted men now in the Army, and to secure such data it would be necessary to inspect the individual records of each enlisted man in the Army.

J. N. SMITH, JR., *Adjutant General.*

Mr. GREENE. Of course, you find now that the Army is in a state of flux?

Lieut. MACKAY. Yes, sir.

Mr. GREENE. There are several different enlistment periods, there are several different enlistments, forms of enlistments. That is to say, soldiers have been given an option of a one or three year period, and they can enlist for different assignments to stations, and this and that. So the Army is not really in a normal condition upon which an estimate can be made as to its future. After it straightens out, then if you contemplate going to the foggy system that puts another hindrance in the way. Without any statistics, as I suppose you do not have any, can you say whether there seems to be a tendency now in the enlisted personnel of the Army among its older members to go out of the service?

Lieut. MACKAY. The record of enlistments should show that.

Mr. GREENE. I do not care about statistics, but I would like to know as to whether there seems to be a tendency a little more than normal for men with 5, 10, or 15 years in the service to give up the idea of staying in the service until they are retired.

The CHAIRMAN. There are always a limited number of men who contemplate staying in the service the full 30 years in order to go on the retired list. But as Mr. Greene has pointed out, war conditions have changed that very materially.

Mr. GREENE. There is always a reaction at such a time as this anyway, and it upsets normal calculations for anticipated expenditures seriously at best. But there might be something in the present conditions to indicate whether there is very much of a departure from the normal.

Lieut. **MACKAY**. Under the present law a man might have 10 or 15 years' service and remain out of the service for more than three months, and when he reenlists he starts in on his second enlistment and thereby loses credit for all the service he has had. The reorganization bill will give him credit for all the service he has had in the Army. So it is difficult to estimate just how many men will become entitled to credit for that service.

Mr. **GREENE**. What I am trying to get at is whether collectively your figures show such a tendency.

The **CHAIRMAN**. The next item is for pay of officers on the retired list, and the amount of the estimate in the tentative draft of the bill is \$3,788,130.

Lieut. **MACKAY**. That amount now has been changed to \$3,994,777.

The **CHAIRMAN**. What is the reason for the increase?

Lieut. **MACKAY**. The original estimate, Mr. Chairman, was made on the basis of the strength on September 1, 1919, but the last Army list and directory shows an increase in the officers on the retired list, necessitating the increase in pay.

The **CHAIRMAN**. How many retired officers does that provide for?

Lieut. **MACKAY**. One thousand two hundred and nineteen retired officers.

The **CHAIRMAN**. The next item is for increased pay to retired officers on active duty.

Lieut. **MACKAY**. The amount for that item is \$225,000.

The **CHAIRMAN**. Will the number of retired officers who are at present performing active duty be decreased in the next fiscal year? There will be a decrease in that number will there not?

Lieut. **MACKAY**. Probably so, but that has been taken into consideration, and I think this is a conservative estimate; that is, the amount of \$225,000. There are a great many retired officers who will remain on recruiting duty or on duty at educational institutions and on other details of that sort.

The **CHAIRMAN**. I thought probably there would be more of those officers on duty in this fiscal year because of the war work, and that in the next fiscal year the number would be considerably decreased.

Lieut. **MACKAY**. That is true, and that point has been taken into consideration in arriving at this figure.

The **CHAIRMAN**. The next item is for pay of retired enlisted men.

Lieut. **MACKAY**. The amount of that item is \$3,755,496.

The **CHAIRMAN**. How many enlisted men are now on the retired list of the Army?

Lieut. **MACKAY**. There are 4,555 of those men.

The **CHAIRMAN**. Some years ago there was a practice in the War Department of giving an enlisted man who had been faithful in the performance of his duties, upon his retirement, a noncommissioned rank far ahead of anything he had had during his actual service. For instance, it was called to my attention that enlisted men who had had noncommissioned service would upon retirement be rated as bandmasters. They may have never played a musical instrument in their lives, but the pay of a bandmaster was very much larger than the pay of an ordinary sergeant, and to favor those faithful noncommissioned officers they were given that rating when they were going out of the service in order to make their monthly

allowance considerably larger than it would have been otherwise. Is that practice still continued in the Army?

Lieut. **MACKEY**. That practice has been discontinued. I understand it was done at times in the past, but it has been discontinued now I understand.

The **CHAIRMAN**. I wish you would look into that very definitely, because in all fairness to the taxpayers of this country such a practice ought not to be countenanced.

[First indorsement.]

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
March 30, 1920.

To the Director of Finance.

In reference to the communication from the office of the Director of Finance, dated March 29, 1920, herewith, it is the policy of the War Department not to promote an enlisted man to a rank that he is not competent to hold on the active list for the purpose of giving him increased pay on the retired list.

Paragraph 41, Compilation of Orders as amended by Changes, Compilation of Orders No. 2, 1917, provides as follows:

"In no case will an enlisted man be promoted to a rank that he is not competent to hold on the active list for the purpose of giving him increased pay on the retired list."

Many enlisted men are promoted to a higher grade within the 12 months just prior to making application for retirement, and in these cases if the period during which the soldier has held the advanced grade is less than three months it is the practice to have the soldier's commanding officer report as to whether the soldier is competent to hold the advanced grade and as to whether he was promoted for the purpose of giving him increased pay on the retired list. If the commanding officer's report is to the effect that the soldier is competent to hold the advanced grade and that he was not promoted for the purpose of giving him increased pay on the retired list, the necessary orders are issued directing his retirement in this grade.

By order of the Secretary of War.

J. N. SMITH, Jr., *Adjutant General*.

Mr. **GREENE**. In all fairness to the comrades of the enlisted men who may not be selected.

Lieut. **MACKEY**. I might add there, Mr. Chairman, that in a decision of the comptroller on January 31—

Mr. **GREENE** (interposing). Of this year?

Lieut. **MACKEY**. Of this year, it is held that retired enlisted men became entitled to the increase authorized by the act of May 18, 1917, and continued by the last appropriation act of July 11, 1919. That means an additional cost of \$269,112.

Gen. **LORD**. May I make an explanation relating to this decision? The decision originally was that the increase in pay of enlisted men during the war was emergency legislation. Enlisted men ordered for duty overseas draw 20 per cent increase on their base pay, beginning with the date of departure from this country and including the date of their landing back in this country. During all our operations overseas, under that decision, these men were paid 20 per cent only on the original pay, exclusive of amount of increase by war legislation. The reenactment of that increase of pay in the act of July 11, 1919, under the comptroller's decision, became permanent legislation, so that the increase belonged to the retired men who had been excluded from it before, and also that the 20 per cent increase of the pay of a man who had served foreign was due for all such service on and after July 11. That threw upon the office of the Director of Finance

approximately 350,000 claims which we are trying to settle. Under that decision the 20 per cent for foreign service would be figured upon the \$30 and not upon the \$15.

The CHAIRMAN. The next item is for pay and allowances of retired enlisted men on active duty.

Lieut. MACKEY. The amount of that item is \$25,000.

The CHAIRMAN. That is the amount asked for in the tentative draft of the bill?

Lieut. MACKEY. Yes, sir; \$25,000.

The CHAIRMAN. Of course, we are going to take care of them in the warrant officer's provision, which is materially increased. Will you still have some retired enlisted men on active duty in addition to the warrant officers we have provided for?

Lieut. MACKEY. Yes, sir. In September there were 238 retired enlisted men on active duty. That would involve an expenditure of \$45,726. The amount we ask for is \$25,000.

The CHAIRMAN. What are those men doing—that is, those retired enlisted men who will not be in the warrant officer's grade?

Lieut. MACKEY. I can not tell you that. I will find that out for you and put it in the record.

On March 27, 1920, there were 104 retired enlisted men on active duty. Fifty-seven were on duty at schools and colleges, 19 at supply depots, 25 were holding emergency commissions, and 3 were holding appointments as Army field clerks.

The CHAIRMAN. The next item is for pay and allowances of Regular Army reservists on active duty.

Lieut. MACKEY. They have been abolished.

The CHAIRMAN. The next item is for pay of retired Philippine Scout officers.

Lieut. MACKEY. The amount of that item is \$171,360.

The CHAIRMAN. Has there been an increase in pay there in law or by any comptroller's decision?

Lieut. MACKEY. Their increase has been proposed in the reorganization bill. They will get the pay of a second lieutenant.

The CHAIRMAN. How many of those officers are there?

Lieut. MACKEY. Ninety-six are estimated for.

The CHAIRMAN. The next item is for pay of retired pay clerks.

Lieut. MACKEY. The amount estimated for that item is \$20,250.

The CHAIRMAN. How many of those have you now?

Lieut. MACKEY. There are 10 retired pay clerks, one ordnance and purchasing clerk at West Point who has been retired with the pay of a retired pay clerk, and one superintendent of the cadets' store at West Point who has been retired on that pay.

The CHAIRMAN. So you have 12 men to provide for?

Lieut. MACKEY. Twelve all told under that item.

The CHAIRMAN. The next item is for pay of retired veterinarians.

Lieut. MACKEY. The amount estimated for that item is \$3,570.

The CHAIRMAN. How many of them are there?

Lieut. MACKEY. There are two of them, at the pay of a retired second lieutenant.

The CHAIRMAN. I wish you would include under each one of these items the number of officers and men provided for.

Gen. LORD. Mr. Chairman, legislation is recommended making a change in the heading of this provision. This recommendation is made by the representatives of the office of the Chief of Staff and

the representatives of the General Staff College, which would separate the General Staff College from the office of the Chief of Staff.

There has been submitted also, in line with that recommendation, the separation of the force required at the General Staff College from the force provided for the office of the Chief of Staff.

Col. Hickman, from the General Staff, will explain the reasons for these changes. This recommendation calls for an increase in personnel.

The CHAIRMAN. What is the new language you propose in place of "Clerks, messengers, and laborers, office of the Chief of Staff."

Col. HICKMAN. Mr. Chairman, the Chief of Staff is the immediate adviser of the Secretary of War on all matters relating to the Military Establishment, and is charged by the Secretary of War with the planning, development, and execution of the Army program.

By virtue of that position and by authority of and in the name of the Secretary of War, he issues such orders as will insure that the policies of the War Department are harmoniously executed by the several corps, bureaus, and other agencies of the Military Establishment, and that the Army program is carried out speedily and efficiently.

In order that he may perform the duties with which he is charged, the Chief of Staff has under his immediate control a body of officers which constitutes the War Department General Staff and he is specifically authorized to attach to the General Staff such personnel, officers, and civilians, as may be necessary in order that the work of the Staff may be efficiently performed.

At the commencement of the war the only authority for the payment of employees in the office of the Chief of Staff was the item in the Army appropriation act which provided for 93 specified positions. This number was increased by 24 in the deficiency appropriation act approved June 15, 1917, and by 19 in the Army appropriation act for the fiscal year 1919, making the total of such employees 136, which is the present statutory force.

While the larger number of statutory positions provided in a measure for the augmented work of the General Staff, yet the work increased so rapidly that it was necessary to resort to lump-sum appropriations in order to pay for the clerical assistance required. Such an appropriation was secured for the Military Intelligence employees in the Army appropriation acts of the war period, and shortly after the organization of the Purchase, Storage and Traffic Division a lump-sum appropriation was also secured for the payment of the employees of that division.

Neither of the appropriations mentioned in the preceding paragraph provided for additional employees in the main portion of the office, nor for employees in the War Plans Division or the Operations Division, and as the work of these agencies of the staff also steadily increased it became necessary in order to keep up to date to secure additional clerical assistance.

Permission to secure additional clerks for the office, to be paid from the appropriation for additional employees in the War Department, was requested in the month of August, 1917. The permission was granted, and as the work increased the force of employees throughout the three agencies mentioned in the preceding paragraph increased proportionately. On August 31, 1917, there were six clerks

on duty in the office paid from this appropriation: on October 31, 1917, 16 employees, and this number increased steadily until August 31, 1918, when a total of 752 employees of the office were being paid from this fund.

Since the signing of the armistice the number of civilians in this office paid from the appropriation for additional employees in the department has steadily decreased, due to the decrease in the work. On December 31, 1918, the total was 453; on March 31, 1919, 214; on July 31, 1919, 174; on October 31, 1919, 128; and at the present time there are 97 employees so paid.

It is reasonably certain that the number last mentioned will be decreased further until on June 30, 1920, there will be not more than 60 employees throughout the main office paid from the additional employees' appropriation, with an average of not more than 49 clerks for fiscal year 1921.

Employees paid from the regular statutory appropriation will be employed, in conjunction with the force of employees paid from the additional employees' appropriation, in the dispatch of business now being done by the office, but which was not done by the office on April 6, 1917, as follows: Collection and arrangement of historical data pertaining to the World War; supervision of matters pertaining to the Field Artillery branch of the Army in the office of the Chief of Field Artillery, which has no statutory existence. Efforts to keep the morale of the Army at a high standard, organization, maintenance, and instruction of the Reserve Officers' Training Corps; educational and recreational work for the Army; legislative work pertaining to the War Department and the Army; investigation and research concerning inventions of a military nature; determination of types of Army equipment and the allotment of such to the military forces; operations of the military forces; procurement, assignment, promotion, and separation from the service of the commissioned personnel of the Army; maintenance of so much of the records of the office of the Chief of Staff as relates to matters of policy defining procedure throughout the Army.

The regular statutory force of the office is now distributed as follows:

Designation.	Numbers.	Salary.	Execu- tive office.	War plans Division.	Opera- tions Division.	General Staff College (loaned).	Field Artillery (loaned).	Map mak- ing, draft- ing, and photo force.
Chief clerk	1	\$2,500	1					
Clerk	1	2,250	1					
Clerks	6	2,000	2	1		1		2
Do.	8	1,800	1	1		2	2	2
Do.	13	1,600		2	1	6		4
Do.	21	1,400	4	9	2	5		1
Do.	24	1,200	7	7	3			
Do.	26	1,000	5	5	13	2	1	
Chief messenger	1	1,000	1					
Messengers	3	840	3					
Captain of the watch	1	800				1		
Packer	1	840				1		
Assistant messengers	15	720	4	7	2	2		
Watchmen	6	720	1		1	4		
Gardener	1	720				1		
Laborers	2	720		1		1		
Laborer	1	600	1					
Charwomen	5	240				5		
	136		31	33	26	34	3	9

On or about July 1, 1920, a redistribution of the clerical force will become necessary by reason of the fact that the Purchase, Storage and Traffic Division will have no appropriation available for the payment of a clerical force and because the reduction in the allotment available for the payment of additional employees in the office will be considerably reduced.

Twenty-one of the positions on the regular statutory force can, it is believed, be transferred to the General Staff College, in view of the fact that the work for which these positions were provided is mostly being done in the General Staff College which no longer forms a part of this office. The force as reduced by these 21 positions would be redistributed about as follows:

Designation.	Numbers.	Salary.	Executive Office.	War Finance Division.	Operations Division.	Map-making, drafting, and photographic force.	Purchase, Storage and Traffic.
Chief clerk.....	1	\$2,500	1				
Clerk.....	1	2,250	1				
Clerks.....	6	2,000	2	1		2	1
Do.....	8	1,800	2	2		2	2
Do.....	13	1,600	2	3	1	4	3
Do.....	21	1,400	5	10	2	1	3
Do.....	24	1,200	7	7	7		3
Do.....	26	1,000	5	5	6		10
Chief messenger.....	1	1,000	1				
Messengers.....	3	840	2				1
Assistant messengers.....	10	720	4	3	2		1
Laborer.....	1	720		1			
Total.....	115		32	32	18	9	24

It will be seen that this redistribution contemplates a reduction of 21 positions in the office of the Chief of Staff, as already indicated, but they should be included in the General Staff College roll, the withdrawal of employees loaned the General Staff College and the office of the Chief of Field Artillery and the assignment of 24 clerks to the Purchase, Storage and Traffic Division.

It seems probable that this reduced force in connection with the limited number of employees to be paid from the additional employees' appropriation will suffice for the fiscal year 1921.

The CHAIRMAN. What is the change of language you desire?

Col. HICKMAN. Referring to page 15 of the committee report—captain of the watch, at \$900 per annum, goes out; 6 watchmen, \$720 each per annum, goes out; 1 gardener, \$720 per annum, goes out; 1 packer, at \$840 per annum, goes out; 15 messengers, at \$720 per annum, are reduced to 10 messengers at the same rate; 2 laborers, \$720 each per annum, changed to 1 laborer at the same rate; 5 charwomen, at \$240 each per annum, goes out; and 1 laborer, at \$600 per annum, goes out.

The CHAIRMAN. Do you want any change in the heading of the item.

Col. HICKMAN. No, sir; we do not; but we want a similar heading to come in in connection with Maj. Gowan's item.

Mr. GREENE. You say you want 10 messengers to be employed in the office of the General Staff in the State, War, and Navy Building?

Col. HICKMAN. We want to keep 10 there and let 5 of that group go to the General Staff College.

Mr. GREENE. You recall, doubtless, as every man who has had any experience there does, that one of the troubles recently was the fact that there was a great deal of messenger service in existence where one head could converse with another head and one subordinate with another subordinate and do the business personally, which, however, was reduced to some form of writing, and sent by a messenger from one to another. Has there been something done to correct that?

Col. HICKMAN. Yes, sir; we endeavor to use the telephone, or cross the hall and come in personal contact with those with whom we have official dealings.

Mr. GREENE. You will recall that that thing grew to grievous proportions.

Col. HICKMAN. We are all endeavoring to avoid that.

AFTER RECESS.

The committee reassembled at 2.30 o'clock p. m., pursuant to the taking of recess.

The CHAIRMAN. The committee will kindly come to order. We will be glad to proceed.

Gen. LORD. Page 16 of the bill, Mr. Chairman.

The CHAIRMAN. We were on the items for pay of the Army, page 16.

Gen. LORD. Maj. Gowen, Mr. Chairman, representing the General Staff College, will substitute on this page.

The CHAIRMAN. The forces that were eliminated from the previous item?

Gen. LORD. Yes; the forces that were eliminated from the previous item.

Mr. McKENZIE. How about that language at the top there?

Gen. LORD. We have a specific heading for that.

Mr. McKENZIE. That is for pay of Army field clerks. They are abolished?

The CHAIRMAN. But I think there are still some of them. They are gradually abolished by elimination year after year.

Lieut. MACKEY. This item under consideration is that in regard to clerks, messengers, and laborers in the office of the Chief of Staff. We have not yet reached the Army field clerks.

The CHAIRMAN. I see. You want to put in new language?

Gen. LORD. Immediately preceding the first item on page 16.

The CHAIRMAN. What is the language you propose to insert there?

Maj. GOWEN. Clerks, messengers, and laborers, General Staff College.

Gen. LORD. That will be just a heading corresponding to the heading that follows for the next group of items.

STATEMENT OF MAJ. JAMES B. GOWEN.

Maj. GOWEN. Under that heading we will provide for a total of 25 clerks in the General Staff College and 21 subclerical employees. The 21 subclerical employees are those that were dropped from the office of the Chief of Staff. The General Staff College, I might say, has no connection with the General Staff in connection with the further

training of officers for the duties of the War Department General Staff and for higher command.

In former years, as the chairman knows, the old Army War College trained a limited number of officers each year. In addition to that, in the old War College Building the War College division of the General Staff was housed, and there were employed down there an average for the four years preceding the war 2 directors, 6 instructors, 23 students, and 21 officers of the War College Division, or an average total number of officers of 52 for each of the four years preceding the war. Working under them was a clerical force averaging 45, and a subclerical force of 27, or an average total of civilian employees of 72.

The CHAIRMAN. Did this committee appropriate for those employees?

Maj. GOWEN. Yes, sir; they were all under the office of the Chief of Staff formerly, but the War Department decided last fall that the General Staff College, having no connection with the General Staff of the Army, would be put under a separate provision in the appropriation bill, and cut out there under the office of the Chief of Staff, and as they did not need the bulk of the subclerical employees, they left them with the General Staff College.

At that time we had 23 clerical employees at the General Staff College, and we submitted a request that there be added to those 23 a provision for draftsmen and one additional stenographer for the General Staff College, they having been handicapped for years down there by a lack of a sufficient number of cataloguers. There was a hole in the force for a period of some seven or eight years, and some 30,000 volumes of the old War Department library have never been catalogued after acquisition by that library, and we wish to get additional cataloguers to clean up that work and take care of the great increase in the volume of books that we will get as a result of the war.

The CHAIRMAN. Will you kindly segregate the 25 clerks that you are asking for into the different classes?

Maj. GOWEN. Yes, sir; 1 chief clerk at \$2,000 per annum; 2 clerks at \$1,800 each per annum; 6 clerks at \$1,600 each per annum; 7 clerks at \$1,400 each per annum; 6 clerks at \$1,200 each per annum; 3 clerks at \$1,000 each per annum. I might say that practically all but these two additional positions that I speak of were to provide for clerks who are already there and were left there by the Chief of Staff when the War College Division of the General Staff was separated from the General Staff College.

The great bulk of them are old employees, some of them having as much as 23 years service.

The CHAIRMAN. But what I still fail to see is in what item these old clerks, as you said they are, were appropriated for in previous bills.

Maj. GOWEN. They were under the office of the Chief of Staff, sir.

The CHAIRMAN. But you have not reduced the clerks, messengers, and laborers of the office of the Chief of Staff on page 15?

Maj. GOWEN. No, sir.

The CHAIRMAN. Were those in addition?

Maj. GOWEN. This will make a net increase in the number of clerks, taking the combined office of the Chief of Staff and the General Staff College, of 25, which is the number asked for in the General

Staff College. The office of the Chief of Staff, after leaving these clerks here and deciding to put this in a separate item in the bill, desired to ask, and Col. Hickman can give the information on that point, for the same additional clerks that had been provided for in order to take care of the additional work of the General Staff.

The CHAIRMAN. Practically, you are asking for 25 additional clerks?

Maj. GOWEN. It is a net increase of 25 additional clerks.

Mr. McKENZIE. If you do not change the language under the head of Chief of Staff, instead of reading "6 clerks at \$2,000," you would have 7 clerks at \$2,000; and instead of 8 clerks at \$1,800, you would have 10 clerks at \$1,800, and so on?

Maj. GOWEN. Yes; it is an additional number asked for in each grade.

The CHAIRMAN. We understand; and the 21 subemployees that you speak of here, these that we have eliminated on page 15 of the tentative draft, you want us to insert on page 16 under the new heading that you have proposed?

Maj. GOWEN. Yes, sir.

The CHAIRMAN. Very well, we understand that proposition. Are you ready to proceed with the pay of the Army field clerks and civil service messengers, and so on, on page 16, Lieut. MacKay?

Lieut. MACKAY. The first item, Mr. Chairman, has been changed to 28 Army field clerks at \$2,000.

The CHAIRMAN. Twenty-eight instead of thirty-six?

Lieut. MACKAY. A total of \$56,000. Seventy-eight Army field clerks at \$1,800, \$140,400.

Mr. McKENZIE. Where is that?

Lieut. MACKAY. That is on page 16.

Mr. McKENZIE. Instead of 91 clerks there?

The CHAIRMAN. Seventy-eight instead of ninety-one.

Lieut. MACKAY. The next item is 145 Army field clerks at \$1,600, \$232,000, and the next, 220 Army field clerks at \$1,400, \$280,000. The next is 329 Army field clerks at \$1,200, \$394,800. One hundred messengers at \$720, \$72,000.

The CHAIRMAN. The next item is "additional pay while on foreign service." That, of course, is eliminated?

Lieut. MACKAY. The additional pay for foreign service is \$7,072.

The CHAIRMAN. Are some of them still abroad?

Lieut. MACKAY. Oh, yes, they are still in the Philippines.

The CHAIRMAN. The next item is, "For commutation of quarters and of heat and light."

Lieut. MACKAY. The amount for commutation is \$310,705.

The CHAIRMAN. The next item is, "For commutation of quarters and of heat and light for field clerks, Quartermaster Corps, \$79,658."

Mr. McKENZIE. Before we leave this page, there are a good many clerks left here, it seems to me, and they are all designated as field clerks.

Lieut. MACKAY. These are Army field clerks.

Mr. McKENZIE. Where do they render this service?

Lieut. MACKAY. At department headquarters and the headquarters of tactical divisions.

Mr. McKENZIE. Anyone outside of the War Department proper down here is designated as a field clerk, is that it?

Lieut. **MAC KAY**. Not necessarily, no, sir.

Gen. **LORD**. We call them field clerks, as distinguished from clerks in the executive department, but they are not Army field clerks. Army field clerks is a technical designation of a particular class of field clerks.

Mr. **McKENZIE**. That is what I had in mind.

We have abolished them; that is, they will be abolished by elimination?

Gen. **LORD**. By elimination.

Mr. **McKENZIE**. And the warrant officers will take their place?

Lieut. **MAC KAY**. That is after there are no longer any enlisted men who are eligible for the position of warrant officers, as I understand it.

The **CHAIRMAN**. The field clerks, as I understand, are permanent civilian employees. They occupy a rather anomalous position. They are dressed in the Army uniform, but they are really not enlisted men. What is their real status?

Lieut. **MAC KAY**. They are appointed by the Secretary of War, and are subject to military discipline and courts-martial. They occupy a military status.

The **CHAIRMAN**. But are they sworn into the military service?

Lieut. **MAC KAY**. Yes, sir, they are in the military service. In a broad and general sense, they are regarded as officers, although they are not commissioned officers. They are appointed by the Secretary of War under that clause of the Constitution which authorizes the head of a department to appoint inferior officers.

Mr. **McKENZIE**. They enjoy all the emoluments of an officer—commutation of quarters, heat, and light?

Lieut. **MAC KAY**. They get commutation for two rooms. They are not retired and they do not receive retired pay.

The **CHAIRMAN**. That is the only thing they have not obtained from Congress?

Lieut. **MAC KAY**. Practically; yes, sir.

The **CHAIRMAN**. The next item is on page 17, "For pay of contract surgeons, \$63,000."

Lieut. **MAC KAY**. That item remains at \$63,000. That provides for 35 contract surgeons, at \$1,800 a year.

The **CHAIRMAN**. Are there as many as that? I thought there were only about 10 or 12.

Lieut. **MAC KAY**. I can not say, Mr. Chairman, how many there are now in the service, but the Surgeon General's Office estimates that their requirements for the year 1921 will be 35.

The **CHAIRMAN**. How many have they now?

Lieut. **MAC KAY**. I can not say how many they have now.

The **CHAIRMAN**. Can you kindly find out and put that in the hearings?

Lieut. **MAC KAY**. Yes.

The **CHAIRMAN**. Whenever the item for contract surgeons comes up on the floor, we are asked what their duties are, where they are located, and questions of that kind are propounded. Can you give us any idea of just where these surgeons are located? Do they move with the Army, or are they stationary?

Lieut. **MAC KAY**. I will find out, if I can, just where the stations are of all of the contract surgeons who are now in the service and include that in the hearings.

The CHAIRMAN. And how the pay is fixed.

Lieut. MACKEY. The pay is fixed by contract. It is usually \$1,800 a year, though I have known contract surgeons to receive \$100 a month. They, of course, did not devote their entire time to the Government.

Mr. GREENE. They had no military status?

Lieut. MACKEY. They are civilians.

Mr. GREENE. They are civilian entirely?

Lieut. MACKEY. Yet they wear the uniform. In a post they are entitled to the quarters and the allowance for heat and light in kind of a first lieutenant.

Mr. FIELDS. Are they subject to the Articles of War while they are on duty?

Lieut. MACKEY. I really can not say. I am inclined to believe they are, though.

Mr. GREENE. Would it not be advisable to follow your figures with a succinct statement as to their military status, where they are stationed, and so on?

Gen. LORD. That is provided for in the law, Mr. Greene. We have a citation here to the law that authorizes their payment and makes them a part of the Medical Department.

Mr. GREENE. I understand, but for our convenience in getting at the questions, a little something can be put in there.

Gen. LORD. Yes, sir; we can do that.

(Following is the statement referred to:)

CONTRACT SURGEONS, UNITED STATES ARMY, IN SERVICE MARCH 29, 1920.

STANDARD CONTRACT FOR GENERAL SERVICE.

One hundred and fifty dollars per month during the continuance of contract, both when on duty and when absent therefrom by proper authority, the regulations as to leaves of absence for commissioned officers governing. When on station at or leave of absence from a post where quarters in kind are furnished by the United States, the physician contracted with shall receive the quarters allowed by regulations to a first lieutenant in the Medical Corps, United States Army, with the authorized allowances of heat and light therefor, and, when traveling under orders, the traveling allowances prescribed by laws and regulations in force for the time.

Cantrell, William B., Gallup, N. Mex.; Wingate General Ordnance Depot, Fort Wingate, N. Mex.

Huber, G. Carl, Ann Arbor, Mich.; University of Michigan, Ann Arbor, Mich.

McAfee, Loy, New York City, N. Y.; assigned to duty at her residence, New York City, and authorized to make not to exceed two trips a month to Washington, D. C., and return to New York City, for purpose of continuing her duties in connection with the medical and surgical history of the war.

Maher, Loretta K., Chicago, Ill.; attending surgeon's office, Washington, D. C.

Mountain, George W., Augusta, Ga.; Augusta Arsenal, Ga.

Yoe, Richard T., Louisville, Ky.; Camp Zachary Taylor, Louisville, Ky.

King, Strodder U., Little Rock, Ark.; Camp Pike, Little Rock, Ark.

STANDARD CONTRACT AT \$75 PER MONTH.

Lewis, Dean DeW., Chicago, Ill.; assigned to duty at his residence, Chicago, and authorized to make not to exceed 10 trips a month to United States Army General Hospital No. 28, Fort Sheridan, Ill., for duty as consultant in neuro-surgery.

Robert, Oscar T., Chicago, Ill.; assigned to duty at Chicago, and authorized to make not to exceed eight trips a month to United States Army General Hospital No. 28, Fort Sheridan, Ill., for duty as consultant in peripheral nerve cases.

Ryerson, Edwin W., Chicago, Ill.; assigned to duty at his residence and authorized to make not to exceed six trips a month to United States Army General Hospital No. 28, Fort Sheridan, Ill., for duty as consultant in orthopedic surgery.

STANDARD CONTRACT AT \$1 PER ANNUM.

When traveling under orders, the physician contracted with shall receive the traveling allowances prescribed by laws and regulations in force for the time. All of which shall be his full compensation and in lieu of all emoluments not therein enumerated.

Ivy, Robert H., Lansdowne, Pa.; assigned to duty at his residence and authorized to make not to exceed four trips a month to Washington, D. C., and return to Lansdowne, Pa., to act as consultant in maxillo-facial surgery at Walter Reed General Hospital, Takoma Park, D. C.

Muller, George P., Philadelphia, Pa.; assigned to duty at his residence, Philadelphia, Pa., and authorized to make not to exceed one trip a week to Washington, D. C., and return to Philadelphia, Pa., for purpose of continuing his duties as secretary of Peripheral Nerve Commission and for consultation with Chief of Division of Surgery.

SPECIAL CONTRACT FOR SERVICE AT SPECIFIED PLACE.

Compensation, \$50 to \$150 per month, during the continuance of contract, which shall be his full compensation, and in lieu of all allowances and emoluments, any provisions of Army Regulations, to the contrary notwithstanding.

Name.	Station.	Compensation per month.
Blair, Vilray P., St. Louis, Mo.	Jefferson Barracks, Mo.	\$75
Buskirk, Wm. H., Miles City, Mont.	Fort Keogh Remount Depot, Fort Keogh, Mont.	100
Clark, Franklin E., Belcoville, N. J.	Mays Landing General Ordnance Depot, Mays Landing, N. J.	100
Clark, Fred H., El Reno, Okla.	Fort Reno, Okla.	150
Cooke, Robt. P., Front Royal, Va.	Front Royal Remount Depot, Front Royal, Va.	150
Dabney, William C., Atlanta, Ga.	Attending surgeon, Atlanta, Ga.	150
Ellis, Alfred L., Metuchen, N. J.	Raritan Arsenal, N. J.	150
Garten, Frank, Westchester Village, N. Y.	Fort Schuyler, N. Y.	100
Kerr, Harry H., Washington, D. C.	Walter Reed General Hospital, Takoma Park, D. C.	75
McKnight, Mar- P., Washington, D. C.	Surgeon General's Office, Washington, D. C.	150
Martland, Harrison S., Newark, N. J.	Assigned to duty at Newark, N. J., in connection with the preparation of the medical history of the war.	100
Naftzger, Howard C., San Francisco, Calif.	Letterman General Hospital, San Francisco, Calif.	75
Neel, Harry A. P., Philadelphia, Pa.	Frankford Arsenal, Philadelphia, Pa.	150
Noonan, Francis J., Troy, N. Y.	Watervliet Arsenal, N. Y.	150
Schaeffer, George C., Columbus, Ohio.	Columbus Barracks, Ohio.	150
Seelitz, Major G., St. Louis, Mo.	Assigned to duty at St. Louis, Mo., for duty in connection with the preparation of a surgical history of the war.	75
Silverman, Joseph A., Valdez, Alaska.	Valdez, Alaska.	150
Sims, Bartlett C., Bryan, Tex.	Reserve Officers' Training Corps, Agricultural and Mechanical College, College Station, Tex.	150
Sloane, Leonard O., Juneau, Alaska.	Juneau, Alaska.	75
Smith, Clarence A., Seattle, Wash.	Attending surgeon, Seattle, Wash.	125
Smith, William A., Charleston, S. C.	Attending surgeon, Charleston, S. C.	150
Stoddard, M. J., Springfield, Mass.	Springfield Arsenal, Springfield, Mass.	100
Sutherland, Wm. H., Rochester, N. Y.	Rochester district ordnance office, N. Y.	75
Vanneman, Joseph S., Princeton, N. J.	Field Artillery detachment, Reserve Officers' Training Corps, Princeton University, Princeton, N. J.	50
Vose, Roden M., Ithaca, N. Y.	Cornell University, Ithaca, N. Y., Reserve Officers' Training Corps.	150

MILITARY STATUS OF CONTRACT SURGEONS.

The National Defense Act of June 3, 1916 (39 Stat., 166), declares that "the Regular Army of the United States shall consist of * * * a Medical Department," and section 10 of the act (supra, p. 171), provides that "the Medical Department shall consist of * * * contract surgeons as now authorized by law." The contract surgeons "now authorized by law" were those appointed by the Surgeon General with the approval of the Secretary of War under the acts of February 2, 1901 (31 Stat., 748, 752), April 23, 1904 (33 Stat., 259, 266), April 23, 1908 (35 Stat., 66, 68), and July 5, 1884 (23 Stat., 107, 112). Medical and dental contract surgeons are a part of the Medical Department of the Regular Army during the life of their respective contracts with the Government, and under subdivision (d) of the second article of war they are subject to military law." (Op. J. A. G., Nov. 27, 1918).

The CHAIRMAN. The next item is, "For pay of nurses, \$965,220."

Lieut. MACKEY. That is changed to read \$819,300.

The CHAIRMAN. How many nurses have you now? Can you put that in the hearing?

Lieut. MACKEY. I will have it inserted in the record.

The CHAIRMAN. These are male nurses?

Mr. MCKENZIE. How many are there?

Lieut. MACKEY. Female nurses. We are providing for 969 nurses in this estimate. I do not know just how many there are now, but will have that inserted.

Mr. MCKENZIE. You probably will not be able to get that?

Lieut. MACKEY. Oh, yes.

The CHAIRMAN. Will you also put in the hearing the pay of the nurses. I suppose it is regulated by the length of service.

Lieut. MACKEY. They have different rates of pay. For the first three years, Mr. Chairman, they receive \$720 a year, \$60 a month. After that they receive a monthly increase of \$5 for each period of three years' service up to 12 years.

The CHAIRMAN. That was in the National Defense Act, if I recall?

Lieut. MACKEY. That was in the act of July 9, 1918.

The CHAIRMAN. July 9, 1918?

Lieut. MACKEY. Yes, sir. It also provides additional pay for nurses at \$360 a year when serving as chief nurses.

(Following is the statement referred to:)

Nurses, Army Nurse Corps, on duty March 26, 1920.

	Army Nurse Corps.	Reserve.	Total.
GENERAL HOSPITALS.			
Army and Navy, Hot Springs, Ark.....	8	1	9
Fort Bayard, N. Mex.....	30	10	40
Letterman, San Francisco, Calif.....	53	38	91
Walter Reed, Takoma Park, D. C.....	73	71	144
No. 2, Fort McHenry, Md.....	56	56	112
No. 6, Fort McPherson, Ga.....	39	40	79
No. 19, Otsego, N. C.....	67	27	94
No. 21, Denver, Colo.....	92	33	125
No. 24, Fort Sheridan, Ill.....	39	110	149
No. 31, Carlisle, Pa.....	25	35	60
No. 41, Fox Hills, Staten Island, N. Y.....	58	60	127
Total.....	540	490	1,030
DEPARTMENT BASE HOSPITALS.			
Fort Bliss, Tex.....	26	11	37
Fort Sam Houston, Tex.....	49	24	73
Total.....	75	35	110
CAMP HOSPITALS.			
Benning, Ga.....	5		5
Bragg, Fayetteville, N. C.....	7		7
Brownsville, Tex.....	6	2	8
Columbus, N. Mex.....	6	2	8
Custer, Mich.....	3	3	6
Devens, Mass.....	2	3	5
Dix, N. J.....	39	16	55
Dodge, Iowa.....	11	9	20
Douglas, Ariz.....	6	4	10
Eustis, Va.....	2	4	6
Funston, Kans.....	12	4	16
Gordon, Ga.....	6	5	11
Grant, Ill.....	12	8	20
Jackson, S. C.....	8	1	9
Humphreys, Va.....	4		4
Kearny, Calif.....	2	3	5
Knox, Stithon, Ky.....	5	5	10
Lee, Va.....	4	3	7

Nurses, Army Nurse Corps, on duty March 26, 1920—Continued.

	Army Nurse Corps.	Reserve.	Total.
CAMP HOSPITALS—continued.			
Lewis, Wash.....	10	3	13
Marfa, Tex.....	5	1	6
Meade, Md.....	9	12	21
Nogales, Ariz.....	6	4	10
Pike, Ark.....	12	6	18
Sherman, Ohio.....	5	3	8
Taylor, Ky.....	18	8	26
Upton, Long Island, N. Y.....	8	1	9
Total.....	213	110	323
POSTS, ARSENALS, RECRUITING DEPOTS, ETC.			
Aberdeen Proving Ground, Md.....	5	1	6
Fort Banks, Mass.....	5	1	6
Columbus Barracks, Ohio.....	4	5	9
Edgewood Arsenal, Md.....	4	2	6
Jackson Barracks, La.....	3	1	4
Jefferson Barracks, Mo.....	8	9	17
Fort Leavenworth, Kans., Disciplinary Barracks.....	5	.....	5
Fort Leavenworth, Kans., Post Hospital.....	3	3	6
Fort Logan, Colo.....	5	1	6
Fort Monroe, Va.....	1	.....	1
Fort Myers, Va.....	4	.....	4
Fort McDowell, Calif.....	1	5	6
Fort Oglethorpe, Ga.....	7	3	10
Raritan Arsenal, N. J.....	3	.....	3
Fort D. A. Russell, Wyo.....	3	4	7
Fort Sill, Okla.....	5	5	10
Fort Slocum, N. Y.....	5	1	6
Fort Thomas, Ky.....	5	2	7
West Point, N. Y.....	7	.....	7
Total.....	83	43	126
AVIATION STATIONS.			
Carlstrom Field, Fla.....	6	.....	6
Kelly Field, Tex.....	4	.....	4
Langley Field, Va.....	7	.....	7
March Field, Calif.....	8	2	10
Mitchel Field, Long Island, N. Y.....	3	1	4
Rockwell Field, Calif.....	2	3	5
Total.....	30	6	36
MISCELLANEOUS STATIONS.			
Army Medical School.....	1	.....	1
Attending surgeon's office, Chicago.....	2	.....	2
Attending surgeon's office, Washington.....	28	2	30
Attending surgeon's office, Fort Sam Houston.....	1	.....	1
Department surgeon's office, Fort Sam Houston.....	1	.....	1
Surgeon General's Office.....	10	1	11
Transports.....	9	6	15
Total.....	52	9	61
NURSES FOR TREATMENT.			
Mental cases, Sheppard & Enoch Pratt, Baltimore, Md.....	.....	1	1
Tuberculosis cases:			
General Hospital No. 19, Oteen, N. C.....	12	37	49
General Hospital No. 21, Denver, Colo.....	5	31	36
Total.....	17	68	85
General cases:			
Letterman General Hospital, San Francisco, Calif.....	2	6	8
Walter Reed General Hospital, Takoma Park, D. C.....	6	10	16
General Hospital No. 2, Fort McHenry, Md.....	1	.....	1
General Hospital No. 6, Fort McPherson, Ga.....	.....	20	24
General Hospital No. 28, Fort Sheridan, Ill.....	4	.....	4
General Hospital No. 31, Carlisle, Pa.....	2	.....	2
General Hospital No. 41, Fox Hills, Staten Island, N. Y.....	2	6	8
Fort Sam Houston, Tex.....	.....	3	3
Camp Dix, N. J.....	.....	1	1
Total.....	17	47	64
Total nurses for treatment.....	34	116	150

Nurses, Army Nurse Corps, on duty March 26, 1920—Continued.

	Army Nurse Corps.	Reserve.	Total.
PHILIPPINE DEPARTMENT.			
Manila, department surgeon's office.....	1		1
Manila, department hospital.....	34		34
McKinley, Fort.....	7		7
Mills, Fort.....	9	1	10
Tientsin, China.....	4		4
Total.....	55	1	56
HAWAIIAN DEPARTMENT.			
Honolulu.....	28	1	29
AMERICAN FORCES IN GERMANY.			
Coblentz, attending surgeon's office.....	2		2
Coblentz, base hospital.....	64	27	91
Total.....	66	27	93
Evacuation Hospital No. 17, Siberia.....	14		14
Total nurses overseas.....	80	27	107
Total nurses, Army Nurse Corps, in United States.....	1,027	809	1,836
Total nurses, Army Nurse Corps, overseas.....	80	27	107
Total nurses, Army Nurse Corps, in islands.....	53	2	55
Grand total nurses, Army Nurse Corps.....	1,190	838	2,028
Approximate number of nurses discharged since November, 1918.....	2,600	16,788	19,388
Discharged this week.....	6	21	27
Total.....	2,606	16,809	19,415
Number nurses appointed in Army Nurse Corps.....	2		2
Number reserve nurses transferred to Army Nurse Corps.....			1
Number relief orders revoked.....	1		1
Number nurses under orders to depart from hospitals for relief from active service.....	44	104	148
Nurses on final leave, discharge effective—			
In March.....	11	12	23
In April.....	19	59	78
In May.....	3	15	18
Total.....	33	86	119

Pay, members of the Nurse Corps.

	Pay per month.	Laws for.
Superintendent.....	\$300	Act July 9, 1918.
Assistant superintendent and director.....	150	Do.
Assistant director.....	125	Do.
Nurses and reserve nurses:		
First 3 years.....	60	Do.
Second 3 years.....	65	Do.
Third 3 years.....	70	Do.
Fourth 3 years.....	75	Do.
After 12 years' service.....	80	Do.
Chief nurses (in addition to pay as nurse).....	30	Act Feb. 28, 1919.
Foreign service increase.....	10	Act July 9, 1918.

The CHAIRMAN. What is the next item?

Lieut. MACKAY. The next item is, "For pay of hospital matrons."

The CHAIRMAN. How many of those are there?

Lieut. MACKAY. Thirty, at \$120 a year, \$3,600.

The CHAIRMAN. Does the medical department propose to continue the same number during the next fiscal year?

Lieut. MACKAY. Yes, sir. That is the same number that has been carried in the appropriation bill for a large number of years.

The CHAIRMAN. The next item is, "For pay of reserve veterinarians."

Lieut. MACKAY. That item remains at \$170,000.

Mr. MCKENZIE. How much of that was spent last year?

Lieut. MACKAY. It provides for 100 veterinarians at \$1,700 a year, which is the pay of a second lieutenant.

The CHAIRMAN. How many were employed last year?

Lieut. MACKAY. I will have to find that from the Surgeon General.

The CHAIRMAN. Is it necessary to employ that many this year, the estimate being reduced somewhat, and many of the artillery cannon being motorized?

Lieut. MACKAY. Well, I will make a special inquiry about that and insert the reply of the Surgeon General in the hearings, Mr. Chairman, if that is satisfactory.

(Following is the statement referred to:)

The estimate contained in the first indorsement, Surgeon General's Office, dated September 30, 1919, file S. G. O. 121.4-1 referred to in the accompanying letter is incorrect, was submitted before any definite information was obtainable as to prospective Army legislation, fails entirely to meet the requirements, and it is requested that it be withdrawn.

The status of reserve veterinarians was created by the national-defense act, section 16, sixth paragraph. There were no reserve veterinarians on duty during the fiscal year 1919-20; so far as known there never have been any such on duty and by reason of the unsatisfactory status (pay and allowances only of a second lieutenant) it is considered out of the question to obtain desirable civilians for this position.

Instead of reserve veterinarians, officers of the veterinary section, Officers' Reserve Corps, have been on duty during the fiscal year as follows:

On July 1, 1919.....	911
On Oct. 1, 1919.....	306
On Mar. 29, 1920.....	219

The number now on duty is well below the irreducible minimum for an efficient service. Officers are being discharged daily who can not be replaced, necessitating the abandonment of the veterinary service at places where it is urgently needed.

The estimate of officers of the Veterinary Reserve Corps required for the fiscal year 1920-21, based on a total of 347, including Regulars, which will be necessary for the Army, either under the national-defense act or that proposed by the present House bill, is as follows:

A. Without reorganization.

B. With reorganization (present House bill).

A. There are at present 89 Regular officers and the national-defense act authorizes 118, leaving 29 vacancies. These should be occupied by officers in grade of second lieutenant under training for appointment in the Regular Corps.

Requirements by grade:

Majors.....	22
Captains.....	48
First lieutenants.....	108
Second lieutenants.....	80
Total.....	258
Regular Corps.....	89
Grand total.....	347

B. The bill allows 140 officers (section 9). There are now 89, leaving 51 vacancies which should be occupied in the grade of second lieutenant by officers in training for appointment to Regular Corps.

Requirements by grade:

Majors.....	21
Captains.....	43
First lieutenants.....	97
Second lieutenants.....	97
Total.....	258
Regular Corps.....	89
Grand total.....	347

The CHAIRMAN. Yes. What is the next item?

Lieut. MACKEY. The next item, "For expenses of courts-martial," etc., is changed to read \$87,500. That is for the expense of courts-martial and the payment of witness and reporters before courts.

The CHAIRMAN. The payment of witnesses?

Lieut. MACKEY. And the reporters before military courts and boards.

Mr. GREENE. Civilian witnesses?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. That item was very largely increased during the war. Eighty-seven thousand five hundred dollars is a material increase over what it was before the war, is it not?

Lieut. MACKEY. No, sir; it is not. In 1916, with an average per capita enlisted strength of 100,185, the expenditures were \$56,219, which is an average annual per capita cost of 56 cents, and in 1917 the per capita cost, by the same method of figuring, is found to be 49 cents, so in this estimate of 175,000 it is estimated at 50 cents per man, and that is as near, I think, as one can forecast.

The CHAIRMAN. The next item is, "For additional pay to officer in charge of public buildings and grounds at Washington, District of Columbia," What is the rank of the present officer in charge of public buildings and grounds?

Lieut. MACKEY. He is allowed the rank and pay of a colonel, and my information is that the present incumbent holds the rank of a lieutenant colonel, and this \$500 is the difference in pay between those grades.

Mr. GREENE. That brings up this proposition, that in the Army reorganization act, if it becomes a law, there is an inhibition upon any man obtaining an advanced grade by detail to duty, except in the case of chiefs of bureaus; and, of course, its purpose is to make the detail out of the grade which provides the service.

Lieut. MACKEY. In that case this item should be entirely eliminated from the estimate. That is right. I had overlooked that.

The CHAIRMAN. The next item is, "For commutation of quarters and heat and light to commissioned officers," etc.

Lieut. MACKEY. That amount has been changed to read \$6,881,546. This is for commutation to 8,021 officers, 837 warrant officers, and 175,000 enlisted men. It is estimated that the cost for commutation for an enlisted man will average \$2 per man, or \$350,000, which is included in the total. The total is \$6,881,546.

Mr. MCKENZIE. I presume you are still paying commutation under that law we passed to give commutation to officers who had dependents while in the field?

Lieut. **MAC KAY**. April 16, 1918; yes, sir.

Mr. **McKENZIE**. And that will continue for some time yet?

Lieut. **MAC KAY**. Presumably; yes, sir.

Mr. **McKENZIE**. Well, now, for instance, does an officer stationed at Camp Benning, or Camp Grant, or Camp Custer, or any of those places where they have officers' quarters, get commutation at those places?

Lieut. **MAC KAY**. The act of April 16 provides that an officer on duty in the field, who maintains a place of abode for his dependents, other than at the place where he is on duty, becomes entitled to commutation. If his family actually occupy the quarters at the camp, then he of course receives no commutation.

Mr. **GREENE**. But it contemplates only that service in the field which makes an officer live under canvas, or in the temporary accommodations of all troops in the field. It does not permit him to have his usual allowance for heat, light, and quarters at the post, and at the same time maintain a private residence for his family?

Lieut. **MAC KAY**. Oh, no, sir.

Mr. **GREENE**. In other words, it only contemplated the necessary, ordinary comforts for a temporary officer who was not to be permanently attached to his homestead when his family might abide while he served temporarily in the Army. He would take up such quarters as the Army furnished to him and would not be obligated to take his family with him, unless perchance some officer was on duty at a post where quarters might be obtained for his family? Was not that the general idea?

Lieut. **MAC KAY**. The whole thing hinges on whether or not his family occupies public quarters.

Mr. **GREENE**. Yes, I know; but that same idea has not been carried out in the Regular Service. Ordinarily the family has to go with the officer?

Lieut. **MAC KAY**. Yes, sir.

The **CHAIRMAN**. But I think the change in the law affecting the regular officers as well as the temporary officers.

Lieut. **MAC KAY**. It provides for all of them.

Mr. **GREENE**. Yes; but what I am getting at is right in line with what Mr. McKenzie asked, and that is how much we can expect to save out of it as soon as we get rid of the temporaries and the Army gets down to its more or less fixed status, by reason of assignment to duty more consistent with that of a regular, and upon conditions where his family could take up quarters with the officer. Is not that the idea involved in that?

The **CHAIRMAN**. Of course, if an officer were assigned to a military post like the Presidio, or like Fort Sherman, or Fort Myer, where they have quarters for the officers, and the officer's family occupied those quarters, he would not be entitled to the commutation?

Lieut. **MAC KAY**. Certainly not.

Mr. **GREENE**. That, of course, has always been so, but what I am getting at is the fact that this act originally, as I understand it, grew out of the fact that we were taking into the Army 100,000 temporaries, and distinctly temporaries, and that those people, of course, in almost every instance, had permanent homes which they did not intend to abandon, in which their families still resided, and they therefore were entitled to commutation for the support of those

homes apart from the quarters of the individual which the field duty required, and that being so, it was held that the Regular ought to have the same opportunity, in view of the fact that all public quarters were overcharged, and then the Regular was given an advantage because of his being able to house his own family where he hitherto had housed them.

When we get back to a normal status, the Regular is expected to have as much accommodation for his family at any of the posts as he used to have, but the temporaries will be out, and we will expect that to come back to the same old business basis we had before, I suppose?

Gen. LORD. But the same thing will obtain in connection with the Regular Army, with this increase, because there are no quarters for all of the officers which you are providing for. An officer himself may be occupying a little room at a post somewhere, or at one of these cantonments, with no accommodations there for his family.

Mr. GREENE. Exactly, I understand that.

Gen. LORD. The estimate is to provide for commutation for officers in the Army at the present time.

Mr. GREENE. I understand that, and as long as that condition obtains, we will have to follow the act out, but as soon as we get on the other basis—I am looking at the future to see how long this is likely to continue.

Gen. LORD. As soon as quarters are available for an officer and his family, he is unable to draw commutation.

Mr. FIELDS. If an officer is occupying a room, for instance, and then quarters for his family become available, he is supposed to take his family into those quarters, or at least his allowance ceases.

Gen. LORD. He can not be paid the commutation unless it is stated on his voucher that quarters are not available, and there must be a declaration certificate by the commanding officer of the post that no quarters are available there.

Mr. MCKENZIE. I want to ask a question, General, in regard to the administration of that law, and I will just put up a concrete case. We will take, for instance, a clerk in the War Department down here who is drawing \$1,600 a year, and he asks for a commission and is given a commission as second lieutenant. He has been permanent in Washington for years, with his wife and family living on Fourteenth Street, for example, and he walks down to the War Department the next morning with his uniform on, and he is a commissioned officer. Now, would that officer be entitled to commutation for quarters?

Gen. LORD. In every case, unless the Government provides him quarters in kind.

Mr. MCKENZIE. That being true, was not a great mistake made, perhaps, in giving that man a commission, so far as the Government is concerned, when they were employing him for \$1,600 a year as a civilian, when he is commissioned to do practically the same work, and giving him \$1,700, and, in addition, paying his rent?

Gen. LORD. There is no excuse for it if he is continued in the same kind of work, but the presumption is when he is commissioned that he is given a higher grade and more responsible work.

Mr. FIELDS. There was an order to that effect, was there not?

Gen. LORD. Yes. We were not allowed to retain in our office, under directions of the Secretary of War, after the declaration of war, any officers who were to be maintained on the same class of work that they performed prior to their being commissioned.

Mr. McKENZIE. Right along that line, I just want to call your attention to what seems to me to have been an abuse, perhaps, of the power to grant commissions. That man, of course, could not go out and do military work. He did not know anything about it. He was simply a civilian and could only do civilian work. Now, why should he be given a commission? To give him a military status, in my judgment, perhaps was an error. I may be wrong about that.

Gen. LORD. I can give you a concrete case which is an example of many. I had in my office a man named Gregor, who was in charge of our mileage. When it came to the payment of mileage and traveling allowances centering in New York, where troops were coming in and out, it was a matter involving many millions of dollars, and it was a matter which should be handled not only promptly but accurately. The soldiers wanted their travel allowance and the officers wanted their mileage expenses when they were ordered overseas. I succeeded in getting Mr. Gregor, who was a National Guard officer formerly commissioned as a captain, and he was sent up to New York, and was down at Hoboken, right on the job, where he operated a big force of clerks handling this mileage proposition, which was a very serious proposition. To-day he is in France as a chief disbursing officer for our troops over in Coblenz.

The CHAIRMAN. When he was commissioned as a captain he was getting \$200 a month pay?

Gen. LORD. Yes, sir.

The CHAIRMAN. How much was he receiving as a civilian employee?

Gen. LORD. I think \$1,600 a year.

Mr. GREENE. These men are all temporaries, and their commissions will expire June 30?

Gen. LORD. Yes; with the exception of those who come in the Regular Army. For example, he is one of the men that I plan to bring in, because he has made good. There were cases where men were better as clerks than they proved to be as commissioned officers, but there were some shining exceptions.

The CHAIRMAN. I want to say, in all fairness, that where a man was doing exceptional work and was holding a responsible position where he had to handle large sums of money, I think during the war you were justified in giving him an increase, even if you had to commission him so as to give him an increase.

Mr. FIELDS. Is it not also a fact that in many cases the importance of the work was such that it was necessary to have a man subject to the Articles of War?

Gen. LORD. Yes; that has occurred often in the bureaus. I would like to retain some of the men that we commissioned in the office, because their work broadened by 100, 200, 300, 400, or 500 per cent, and give them an administrative job. What before was a very simple problem became a problem of extraordinary magnitude after we got into the war, but I do not know of any case where the Secretary of War made an exception to the rule that if we commissioned a man he had to go out of Washington.

Mr. GREENE. You said, General, that your experience under this law, subject to such abuses as it might have been, was that you developed some first-class material that it is now desirable to get into the Army, so that, after all, if we forget the abuses, as we shall have to, it has resulted in a try-out that we hope will strengthen the commissioned personnel of the service when the reorganization act goes into effect?

Gen. LORD. That is true.

Mr. FIELDS. I note that the estimate submitted is for approximately 60 per cent of the enlisted strength under the reorganization bill and 90 per cent of the commissioned strength under the reorganization bill. If you are going to estimate for only 60 or approximately 60 per cent of the enlisted strength, would there not be some reduction on that additional 30 per cent of the commissioned strength?

Gen. LORD. The understanding was, and the instruction was, that we could use our full commissioned strength. The reason that the 10 per cent reduction was made was that we have never at any time had the full complement of officers, because of resignations and deaths and the changes in particular grades, etc. There is always an interim. We were never up to our full, complete strength, our full, complete commissioned strength, so that in figuring the amount of money that we would need we gave the Treasury the benefit of that 10 per cent.

Now, as to the enlisted strength, we are following the Secretary of War, and I will submit at the end of the hearing a table showing the estimated cost of an Army of 175,000, 200,000, and 235,000, which was the request of Mr. Kahn. That was the basis we followed for the commissioned strength, and then, in addition to that, the estimate of cost for the 299,000.

Mr. FIELDS. If an army of 280,000 enlisted men can be officered with 17,825 commissioned officers, as provided in the reorganization bill, can not an army of 175,000 men be officered with a less number?

Gen. LORD. It possibly could, but the whole intent of reorganization was, as stated during the discussions on the floor of the House by Mr. Green, that our commissioned strength is really the only permanent part of the Army. The enlisted personnel comes and goes, and there will be abundant use for the full complement of the commissioned strength in various useful activities and avenues of employment in connection with the Army.

The CHAIRMAN. For instance, there are 2,000 men in the detached officers' list.

Mr. GREENE. I think there is another phase of that, which perhaps the record might show now, and that is, for instance, Mr. Fields is making a comparison of 10 per cent on commissioned personnel, and 40 per cent reduction in enlisted personnel, yet those two percentages are not figured on the same basis, and a comparison really can not be safely made, because the ratio of 17,832 officers to get the number of enlisted men contemplated in this bill is not a military ratio. It is an arbitrary number.

Gen. LORD. Then, too, in connection with that, I think Col. Morrow stated yesterday that in the Reserve Officers' Training Corps there were 125,000 men, so that that should be added to the strength of the Army, because they will be under the constant instruction of the Army officers.

Mr. FIELDS. I do not now recall whether the officers in the Philippine Scouts are included in that 17,000.

Gen. LORD. Yes; they are.

Mr. FIELDS. But the enlisted personnel in the Philippine Scouts is not included in this estimate of \$175,000?

Gen. LORD. No. There are some eight thousand and a half Philippine Scouts enlisted personnel at the present time.

Mr. FIELDS. That would make a difference?

Gen. LORD. Yes.

The CHAIRMAN. The enlisted personnel provided in the reorganization bill, exclusive of 7,000 unassigned recruits, and the total enlisted personnel allowed by law, of 12,000 Philippine Scouts, is 280,000, rather than 299,000.

The next item is, "For interest on soldiers' deposits, \$150,000."

Gen. LORD. I am going to recommend a reduction of that to \$100,000, and for the information of the committee I would like to tell you something about the savings bank we are operating down there under the Director of Finance. During 1919 the number of deposits was 126,487, the amount deposited being \$5,252,601.03. The number that withdrew in that year their deposits was 59,425. The principal repaid to them was \$1,725,277.17.

During the current fiscal year the total number of depositors up to March 23, amounted to 27,258; the total amount received was \$1,554,108.41. The number repaid was 185,100, and the principal repaid was \$6,381,863.82. The interest paid was \$230,260.59.

I recently secured these figures, and the reason I made the reduction suggested was that the amount remaining to the credit of depositors is \$2,381,384.96, and I figured that on the basis of that amount, and of what my previous recollection of it is that \$100,000 will probably be sufficient to meet the full amount, and with the approval of the committee, I will submit that statement in the record.

The CHAIRMAN. Very well.

(The statement referred to is as follows:)

Report of soldiers' deposits.

	Deposits received.		Deposits repaid by finance officers.		
	Number.	Amount.	Number.	Principal.	Interest.
Received and repaid during the following years:					
1917.....	52,654	\$1,219,193.02	16,446	\$596,771.98	\$48,104.39
1918.....	55,435	1,568,449.32	13,622	803,603.76	60,315.51
1919.....	126,487	5,252,601.03	59,425	1,725,277.17	128,158.34
Amount received and repaid during present fiscal year to Mar. 23, 1920.....	27,258	1,554,108.41	185,100	6,381,863.82	230,260.59

Amount remaining to credit of depositors.....	\$2,381,384.96
Largest number of deposits during 1 month.....	2,432
Largest amount of deposits during 1 month.....	\$120,680.97
Largest number repaid during 1 month.....	3,758
Largest amount repaid during 1 month.....	\$296,796.26
Largest interest repaid during 1 month.....	\$2,886.70

The CHAIRMAN. The next item is, "For pay of expert accountant for the Inspector General's Department." We have been carrying that for some time, the amount being \$2,500.

Lieut. MACKEY. There is no change in that.

Mr. MCKENZIE. You can not get a very expert accountant for \$2,500.

Gen. LORD. We have a very expert man. He has been there for some time. I do not know how long it will be before he will get a job outside.

The CHAIRMAN. The next item is, "For extra pay to enlisted men employed on extra duty," etc.

Lieut. MACKEY. The extra-duty pay has been abolished, Mr. Chairman, so that item would be eliminated.

The CHAIRMAN. That has been abolished altogether, so we will cut that out.

Lieut. MACKEY. The reorganization bill proposes to abolish it.

The CHAIRMAN. Both items?

Lieut. MACKEY. All three items.

The CHAIRMAN. Then we go to the item, "For mileage to commissioned officers," etc.

Lieut. MACKEY. That item for mileage to commissioned officers has been changed to read \$3,000,000 instead of \$3,500,000.

The CHAIRMAN. That is based on 7 cents a mile?

Lieut. MACKEY. Seven cents per mile; yes, sir.

The CHAIRMAN. Will there be as much traveling this fiscal year as there has been during the war?

Lieut. MACKEY. Well, this estimate was based on the expenditures during prior years under this item. I found that during the fiscal years 1909 to 1916, inclusive, the average expenditure for mileage was \$116.24 per officer per annum. That amounts to \$1,864,722 for 16,042 officers. Then it is estimated that 37,275 officers of the Officers' Reserve Corps will be called to active duty during the fiscal year.

The CHAIRMAN. For what purpose?

Lieut. MACKEY. For the purpose of training.

The CHAIRMAN. Well, you are only going to have one Reserve Officers' Training Corps camp.

Lieut. MACKEY. These are officers of the Officers' Reserve Corps.

The CHAIRMAN. I know. You propose to put them into this Reserve Officers' Training Corps now for the purpose of instructing young men, do you not?

Lieut. MACKEY. No. This is for the purpose of receiving instruction.

The CHAIRMAN. This is for training the reserve officers?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. I see. You expect to have 35,000 officers at these camps?

Lieut. MACKEY. That is the estimate, Mr. Chairman.

The CHAIRMAN. When are those camps to be held?

Lieut. MACKEY. There are no dates fixed for the camps. They are assigned by the War Department to duty with the troops either at the camps or military posts, or perhaps at headquarters.

Mr. MCKENZIE. Let me interject right there, will not some of these officers go to these officers' training schools, like Camp Benning and

the different places of that sort, the Infantry officers going to Camp Benning, the Artillery officers to Camp Knox, and different places? That is my understanding of this reserve officers' training, that they do not go into camp the same as a citizen's camp or Reserve Officers' Training Corps, but they go just the same as officers might go to a school for instruction.

Gen. LORD. These are reserve officers, staff and line.

Mr. GREENE. Already commissioned?

Gen. LORD. Already commissioned.

The CHAIRMAN. The next is, "For additional 10 per cent increase of pay of officers on foreign service." That is almost all eliminated, is it not?

Lieut. MACKAY. No, sir; that item has been changed to \$291,797.

The CHAIRMAN. What is the reason for the increase?

Lieut. MACKAY. Well, it is estimated that we will have approximately an average of one division on foreign service.

The CHAIRMAN. Twenty-five thousand men?

Lieut. MACKAY. One division, at its minimum strength, which is 16,665 men. In fact, I have estimated for 1,059 officers on foreign service.

Mr. MCKENZIE. Does that include the officers with troops on the German frontier?

Lieut. MACKAY. That includes all of them, the estimated average during the year.

The CHAIRMAN. The Philippines is not foreign soil?

Lieut. MACKAY. The foreign service includes the Philippines and Alaska also.

The CHAIRMAN. The Panama Canal and Hawaii were cut out of the foreign service?

Lieut. MACKAY. No; they get no foreign service pay.

Mr. GREENE. The statistical report for the current week shows 425 commissioned officers in Germany now. I do not know whether this means to include all those under the jurisdiction of commanders.

The CHAIRMAN. Where there are any districts where they propose to hold plebiscites or occupied territory on the Rhine.

Lieut. MACKAY. But they also have a few troops in the Philippines and also in Alaska who receive additional pay for foreign service.

The CHAIRMAN. Then we have a few troops in France winding up the work?

Lieut. MACKAY. And in China and Siberia, perhaps.

Mr. GREENE. Those totals show Germany 737, Philippines 639, France 73, and China 47.

Lieut. MACKAY. That makes a total of 1,496, and you have not included Alaska there.

Mr. GREENE. In Alaska there are 20?

Lieut. MACKAY. That is over 1,500 officers at present.

The CHAIRMAN. There is a very interesting question involved in that situation. By agreement, Germany was to pay our officers and men on German territory. Are we paying them at present and presenting a bill to Germany accordingly?

Lieut. MACKAY. The cost is being ascertained now, Mr. Kahn, the bill to be presented to Germany.

The CHAIRMAN. No bill has been presented yet?

Lieut. MACKAY. Not to my knowledge.

The CHAIRMAN. We have been paying our officers and men right along?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. Is there any prospect of getting any money from Germany to reimburse us for what we have expended in that direction?

Lieut. MACKEY. I am afraid I can not say.

The CHAIRMAN. You can not answer.

Lieut. MACKEY. I can not answer that.

The CHAIRMAN. Is there any propaganda that you know of, to make a further present to the nations of the world by not putting in a bill for anything of this kind?

Lieut. MACKEY. I do not know; none that I know of.

The CHAIRMAN. The next item is, "For additional 20 per cent increase of pay of enlisted men on foreign service." Have the enlisted men been materially reduced?

Lieut. MACKEY. No, sir. That item has been changed to read \$1,497,548.

The CHAIRMAN. That is based on how many men?

Lieut. MACKEY. An average of 16,675 enlisted men.

The CHAIRMAN. Suppose it should be desired on the part of the Members of the House to bring those men home by cutting out this appropriation altogether, so that on materially reducing it so as to make allowance for men in the Philippines, Alaska, and China, would there be a good prospect of bringing these enlisted men and officers in Germany home? That is a question you do not know anything about?

Lieut. MACKEY. I am afraid not, Mr. Kahn. I might add here that this amount has been materially increased on account of a recent decision of the comptroller, whereby he decided that enlisted men on foreign service, privates, we will say, on foreign service, were entitled to 20 per cent on \$30 instead of \$15.

The CHAIRMAN. That was explained this forenoon.

The next item is, "For pay of one computer for Artillery Board."

Lieut. MACKEY. There is no change in that. That has been the same for a number of years.

The CHAIRMAN. The next item is, "For payment of exchange," etc.

Lieut. MACKEY. There is no change in that item.

The CHAIRMAN. Did you use all of that?

Gen. LORD. Yes; and more. We put it in there for authority to pay whatever it amounts to.

The CHAIRMAN. The next item is, "For additional pay to officers below the grade of major required to be mounted and who furnish their own mounts."

Lieut. MACKEY. There is no change in that item. That is \$300,000

The CHAIRMAN. How much did you have last year?

Mr. MCKENZIE. And how much of it was spent?

The CHAIRMAN. I do not see that this print of the bill carries any item in last year's appropriation. I would like to have the figures.

Lieut. MACKEY. The amount appropriated last year was \$240,000.

The CHAIRMAN. Why should it be increased at the present time?

Lieut. MACKEY. Well, I am afraid that that estimate last year was insufficient. The officers were discouraged from owning their own mounts during the war. Now that we are returning to normal times, it is thought a greater number of officers will acquire their own mounts, and become entitled to this additional pay.

The CHAIRMAN. Gen. Lord, how much of that \$240,000 carried in the last appropriation bill was expended?

Gen. LORD. I have not that here. I will insert it in the record and give the amount that was appropriated.

Expenditures under the item "Additional pay for mounts" not available.

The CHAIRMAN. These items of Carroll, Lazear, and Kissinger have been in the law for a long time, and there is no change in them.

Lieut. MACKEY. No change.

The CHAIRMAN. The other items that have been submitted can be stricken out?

Lieut. MACKEY. Yes, sir.

The CHAIRMAN. All the balance of that page?

This line at the top of page 20, "Compensation for filing reports to persons who complete training"——

Lieut. MACKEY. That should be stricken out.

Gen. LORD. That is a part of the military training.

In the fifth line on page 20, after the comma, following the word "officers," there should be inserted the following: "Warrant officers, members of the Officers' Reserve Corps when ordered to active duty." That provides for that class of corps officers.

The CHAIRMAN. That is the two additional classes of officers that we add?

Gen. LORD. Yes.

The CHAIRMAN. That completes the item for pay of the Army and mileage?

Gen. LORD. We will next take up the item for rent of buildings, Quartermaster Corps, on page 42 of the bill, the second paragraph.

RENT OF BUILDINGS—QUARTERMASTER CORPS.

STATEMENT OF LIEUT. COL. J. C. WHITAKER, QUARTERMASTER CORPS.

The CHAIRMAN. Col. Whitaker, we will be glad to hear you on the item of rent of buildings, Quartermaster Corps.

Col. WHITAKER. Mr. Chairman, this appropriation is for the payment of rental on 25 buildings located within the District of Columbia which are being used by the War Department. While the estimate as originally submitted was for \$75,000, it has been decided, with the concurrence of the Secretary of War, to incorporate in this estimate certain buildings, the rental of which has been paid from other appropriations, and the amount of the estimate is therefore increased to \$225,046.10.

The CHAIRMAN. What are the other appropriations that those rents were paid from, and will it hereafter be included in this additional language in this appropriation?

Col. WHITAKER. That is the purpose of it, sir, to get it all under one appropriation.

Practically all of these activities were located in Washington at the outbreak of the war, and the increase is a natural outgrowth of the increased demands on the different services. This growth has not been in proportion to the growth of the Army as a whole. The normal requirements of the years directly preceding the war averaged

about \$45,000 per annum, and had this ratio of increase been maintained as the Army was enlarged, the requirements would have been approximately \$1,332,000. As a matter of fact, at the peak they were less than \$300,000, and at the present time are gradually tapering to the normal requirements.

The necessity for the use of these buildings is an inheritance from an Army of 4,000,000 men, and is not based on the present strength of the Army. It is impossible to demobilize the utilities of an army with the same rapidity that the personnel is demobilized. A careful examination discloses that some of the storehouses are now being taxed to find room for supplies which are being returned from overseas. At the time this estimate was originally made the requirements which it is now desired to embody within this appropriation amounted to \$284,176.86, but by the elimination of every building which was not absolutely essential, this amount has been reduced by \$59,130.76, or slightly over 20 per cent.

In an effort to further reduce these requirements a list of the buildings included in this estimate was submitted to the "joint committee to assign space in public buildings," and they stated that it would be impossible for them to place any of these projects in Government owned buildings during the fiscal year 1921. They further advised that all of the space at their disposal was office space and, after an examination of the rentals involved, they had found them so reasonable that they would be the last to be furnished with Government owned space, and that their policy would be to first transfer those offices for which a higher rental was being paid.

The CHAIRMAN. Some of the buildings that were constructed for special organizations like the Food Administration, and the Fuel Administration, and several others of that kind are temporary buildings to be sure.

Col. WHITAKER. Yes, sir.

The CHAIRMAN. But could any of those buildings be used to advantage, especially the ground floors, for storage?

Col. WHITAKER. No, sir, we have not been able to find such space. Personally I have examined every building, and I can not locate space in any of them. The joint committee advise they can not furnish me any space.

Mr. McKENZIE. How many buildings have you?

Col. WHITAKER. Twenty-five, sir.

The CHAIRMAN. You have 25 rented buildings?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. How many of these temporary buildings are there in Washington?

Col. WHITAKER. You mean how many are on rented ground?

The CHAIRMAN. No; that are on Government land, like those buildings down on the Mall. I mean the buildings at Sixth, Seventh, and B Streets, and so on?

Col. WHITAKER. I should say, taking each building as a separate unit, that there are probably 15.

The CHAIRMAN. Fifteen?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. Are those buildings going to be used right along by the various bureaus of the War Department?

Col. WHITAKER. So far as I know, they are. They come under the joint committee to assign space, and it was with the desire to get some of our activities placed in these buildings that I made the request of the joint committee.

The CHAIRMAN. Have the various activities in the War Department gradually been moved out of rented buildings into these temporary structures?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. Do you know how many buildings we have that are now used for office purposes here in Washington by the War Department?

Col. WHITAKER. You mean for which rent is being paid, Mr. Chairman?

The CHAIRMAN. Yes, sir; rent for buildings, I will ask, and I will follow that up by rent for ground.

Col. WHITAKER. I suppose you would consider a building such as is occupied by the Army Medical School as an office building?

The CHAIRMAN. No; what I meant was that for a time you had a building on H Street near Sixteenth, that was being used first by the Signal Corps, and then by some other branch of the War Department. It was originally a private house, and can be converted into residence property very shortly.

Mr. GREENE. I would like to understand the question, too. Do you mean all the additional rented space made necessary by the war-time activities, over what we used to carry normally?

The CHAIRMAN. Yes.

Col. WHITAKER. Well, included in this list I did not find any offices that were being hired in addition to the normal requirements, with the exception of two buildings which were rented to take care of the overflow of the Army Medical School. They were buildings 458, 460, and 472 Louisiana Avenue, and were required to take care of the additional activities at 462 and 464 Louisiana Avenue. The other office building included in this list is the Lemon Building, which we have occupied for some years. The rest are all warehouses.

The CHAIRMAN. Then, of course, the Depot Quartermaster Building.

Col. WHITAKER. At Seventeenth and F Streets. Yes, sir. We required one building to take care of his overflow, and acquired the adjoining building on F Street known as 1702-4 F Street.

The CHAIRMAN. But there was no private compensation?

Col. WHITAKER. We pay \$3,000 per annum for that building.

The CHAIRMAN. During the war, for instance, a part of the Ordnance force was in a building at Nineteenth and I Streets or Eighteenth and I Streets.

Col. WHITAKER. The construction division had an apartment house that was given up as soon as they could secure space in a Government-owned building.

The CHAIRMAN. You are not renting any buildings of that kind at the present time?

Col. WHITAKER. No, sir.

The CHAIRMAN. Now, from what appropriations have you been taking the money for the rental of these buildings that you now speak of?

Col. WHITAKER. Rent of buildings, Quartermaster Corps, which is \$75,000, plus \$8,000 from barracks and quarters, and \$182,000 from inland and port storage and shipping facilities.

Gen. LORD. Mr. Chairman, if I might interpolate a remark here, this first became a separate item in the Army bill after August 24, 1912. Prior to that time the rentals in the District had been carried in barracks and quarters. The Secretary of War, at that date, thought it should be a separate appropriation, and it was so enacted, and Col. Whitaker discussed the matter with me, and I thought, as a matter of crystalizing the thing, that it would be well to get these rentals where they belonged, under the proper appropriation, so that the committee and Congress and everybody could keep actual track of them. The proper appropriation for the payment is this appropriation in normal times, and we had better get it here in its entirety so that the committee would have it under its own personal view.

Mr. McKENZIE. Twenty-five of these twenty-seven buildings that you speak of are used for storage, I believe?

Col. WHITAKER. Seven of them are office buildings, which are considered as three projects. The Medical Department have three buildings which are occupied by the Army Medical School and are considered as one project. The zone, formerly the Depot Quartermaster Supply Officer, occupies two buildings which are considered as one project, and the Director of Finance occupies the Lemon Building. I should add one more, the Attending Surgeon at Connecticut Avenue and L Street, that makes a total of four.

Mr. McKENZIE. That would leave 23?

Col. WHITAKER. Those 6 buildings deducted from 25 would leave 19.

Mr. McKENZIE. What have you stored in those buildings?

Col. WHITAKER. Well, there is the engineer general depot to supply engineer material for coast-defense stations, which occupies two warehouses. That is a project that was formerly housed at Washington Barracks, but due to the war they were required to secure these additional warehouses. The Zone Supply Officer stores all of his subsistence and regular supplies for this zone in other warehouses here. The Field Medical Supply Depot which occupies one building at No. 15 M Street, required an additional building to take care of his supplies. In fact, his warehouses are overflowing now due to the return of field medical supplies from overseas.

Mr. GREENE. How does it happen that the Census building on First Street NW., is now occupied by the Zone Supply Officer, or commissary, or something of that kind?

Col. WHITAKER. That is a quartermaster sales room which we are required by law to maintain.

Mr. GREENE. Where was it formerly maintained?

Col. WHITAKER. At 1128-1130 Connecticut Avenue, for which we were paying \$18,000 a year, and we desired to effect a reduction. We are now paying \$12,000, a saving of \$6,000 per annum. In addition to that saving, we secured a building large enough to contain warehouse No. 12, which gives us not only the salesroom, but a warehouse in addition, for \$12,000.

The CHAIRMAN. Is there any ordnance warehouse among those which you mentioned?

Col. WHITAKER. No, sir.

The CHAIRMAN. Or quartermaster supplies?

Col. WHITAKER. There are some ordnance supplies carried at the quartermaster sales room for sale, but that is in no sense storage.

Mr. McKENZIE. Of these supplies in these various buildings has any amount of it been declared surplus?

Col. WHITAKER. Not to my knowledge; sir. It is live storage.

Mr. McKENZIE. Is there an effort being made to keep the supplies up so that the buildings will be kept full as reserves?

Col. WHITAKER. No, sir; there has been a considerable effort made to reduce these supplies. We have been after them to attempt to reduce the supplies in a great many warehouses, the field medical supply depot is a typical case. That is the field medical supply depot for the entire Army. When supplies are received from overseas, it becomes necessary to concentrate them in these buildings, and they are in receipt at this time of approximately 40 carloads per month of this material, in addition to what they already have on hand.

Mr. McKENZIE. Then, from your observation in going around and looking into these various warehouses, would it be your judgment that a very small appropriation would meet all of the requirements of the Quartermaster and the Medical Corps, or supply them for the next year.

Col. WHITAKER. I do not believe I just get your meaning.

Mr. McKENZIE. What I mean is this. If you have 19 buildings here in Washington packed full with supplies. It is important for us to know whether we shall appropriate money to buy material to fill 15 or 20 more buildings in the next year. That is the point I am getting at.

Col. WHITAKER. I am afraid you have asked me something about the requirements of the service which I am not in a position to answer.

The CHAIRMAN. The Quartermaster General can answer that.

Mr. McKENZIE. I understand that these large buildings that you are now renting are full.

Col. WHITAKER. Yes, sir. I know that if they do not have these buildings they will be compelled to ask for shipping orders, and where they will put them I do not know, sir.

Mr. GREENE. How does the present storage demand in Washington or the District compare with the prewar demand for the same things, that is represented in money value?

Col. WHITAKER. The normal requirements were \$45,000.

Mr. GREENE. In prewar times?

Col. WHITAKER. Yes, sir.

Gen. LORD. For the two years 1913 and 1914 it was \$49,587; in 1915 and 1916, \$45,987; in 1917, \$42,039.10.

Mr. GREENE. Taking \$45,000 as a fair strike in between, you now ask for \$87,000?

Col. WHITAKER. \$225,000.

Mr. GREENE. Then, if those former items cover the same—

Gen. LORD. They cover the Lemon Building and some of the buildings that were included in the \$125,000.

Mr. GREENE. How much do you ask for now?

Col. WHITAKER. \$225,000.

Mr. GREENE. I do not care so much for that. I am getting at the principle of the thing. There is about \$170,000 that is now necessary, in addition to prewar requirements?

Col. WHITAKER. About \$180,000, sir.

Mr. GREENE. What does that \$180,000 represent? Does it represent stores that are likely to be maintained in the same volume and character continuously?

Col. WHITAKER. No, sir.

The CHAIRMAN. Or does it represent a constantly diminishing storage?

Col. WHITAKER. It is gradually tapering off. It had reached approximately \$300,000 during the war, and is now considerably less. The requirements this year are \$265,000, and we are asking for approximately \$225,000 for next year.

Mr. GREENE. What is the reason for the tapering being so gradual? Are they stores that are being consumed through the ordinary use of the Army, or are they awaiting sale?

Col. WHITAKER. Some of them are awaiting sale and some of them being normally consumed, and some of the activities are not being reduced, due to the fact that they are compelled to take care of shipments from overseas.

Mr. GREENE. That are still coming in?

Col. WHITAKER. Yes, sir.

Mr. GREENE. Which means that it must be assorted to determine whether it will be stored for use or disposed of by sale?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. It would be surplus?

Col. WHITAKER. Yes, sir.

Mr. GREENE. Are the several portions of this property that consist of material awaiting such disposition as to consumption, sale, or storage easy to be determined in percentage, or is that only a matter of rough guess after all?

Col. WHITAKER. Only a matter of rough guess, I should say.

Mr. GREENE. What I am trying to find out is whether the appropriation now estimated for for the storage of this material in these buildings, which was originally \$45,000, is hereafter to be the normal appropriation, even after the reduction that you contemplate is made, or whether we may expect to see it come down somewhere near the normal appropriation?

Col. WHITAKER. I have no doubt that it will normally approach the old appropriation.

Col. SMITH. There are some activities at least that we have now which we did not have before the war; for example, the sales commissary, and then provision was made for the Motor Transport Corps.

Mr. GREENE. In other words, some of these things are going to be fixed upon us.

Col. SMITH. The sales commissary is a relatively large item.

Mr. MCKENZIE. Is the Government tied up on any long-term leases on any of these buildings?

Col. WHITAKER. Only in one case. That is the case of the field medical warehouse, which was a building constructed especially for the Government under contract to occupy it for five years.

The CHAIRMAN. Where is that warehouse?

Col. WHITAKER. On M Street, adjoining 21 M Street. I do not know the exact number of it, but it is described as lots 18 to 25, square 673.

The CHAIRMAN. It is right near North Capitol Street?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. What rental are we paying?

Col. WHITAKER. We are paying \$50,000 a year, sir.

The CHAIRMAN. We are obliged to retain it for five years?

Col. WHITAKER. Yes, sir.

The CHAIRMAN. So that if space should become available in one of the Government owned buildings, this proviso in this paragraph could not be applied to that building?

Col. WHITAKER. No, sir; they would have to move some other activity first.

There is another condition that exists, sir, that I have not brought to your attention, and that is the fact that rentals are now considerably higher than they were before the war. We have had to pay increased rates, and if those rates continue, even though the activities were the same, the prewar appropriations would be insufficient.

The CHAIRMAN. Have the increases been abnormal?

Col. WHITAKER. I do not think they have been abnormal. On these buildings I think we have secured pretty fair rentals, and the joint committee thinks so.

Mr. GREENE. Has anybody recently taken pains to see whether these activities, all of them, or practically all, might be assembled on some common site and in some common building or group of buildings that the Government could own, with the idea of economy?

Col. WHITAKER. I have heard it suggested that that thing might be done at Camp Meigs. It is purely unofficial. If the Government were to purchase Camp Meigs, they could assemble all of the warehouses there.

Mr. GREENE. Of course, I have in mind the fear, perhaps, that these things, either in activities or in storage, will become permanent upon us, so that plan should contemplate that reduction.

Mr. MCKENZIE. Are the garages to take care of all the military automobiles and trucks contained in this list of buildings?

Col. WHITAKER. All the motor transportation within the District is taken care of, sir, in buildings hired under this appropriation.

The CHAIRMAN. How many such buildings are there?

Col. WHITAKER. There are three garages and one inclosed lot, known as 141 Q Street; rear of 141 Q Street, rear of 205 Q Street, and 207 Q Street. Also a joint stable and garage at Nineteenth and Virginia Avenue.

The CHAIRMAN. Will it be difficult for you to put into your hearing a full statement of where the buildings are which you are now renting and the rental paid for each building?

Col. WHITAKER. Yes, sir; I can furnish that statement.

The CHAIRMAN. And the use to which it is put?

Col. WHITAKER. Yes, sir.

(The statement referred to is as follows:)

Revised estimate of buildings and ground required by the zone supply officer, Washington, D. C., for use in connection with the United States Army, including stables, storehouses, garages, offices, medical dispensary, etc., during fiscal year 1921.

Name of building.	Location.	Purpose for which used.	Area, square feet.	Annual rental.
Occupied by Medical Department:				
No. 1. Army Medical School.	472 Louisiana Avenue NW	Army Medical School.....	18,000	\$6,000.00
No. 2. Office and dispensary.	Connecticut Avenue and L., 1106 Connecticut Avenue.	Office and dispensary.....	8,313	5,880.00
No. 3. Army Medical School.	462-464 Louisiana Avenue NW.	Army Medical School.....	57,000	13,080.00
No. 4. Army Medical School.	458 Louisiana Avenue, NW	.....do.....	6,500	2,400.00
Occupied by Signal Corps:				
No. 5. Signal Corps laboratory.	1710 Pennsylvania Avenue NW.	Signal Corps laboratory...	5,714	2,100.00
Occupied by Finance Service:				
No. 6. Lemon Building (zone finance officer).	1729 New York Avenue NW.	Office building.....	24,993	7,200.00
Occupied by Transportation Service:				
No. 7. Corral (for quartermaster stables).	Square 128, lots 15-21.....	Corral for stables.....	18,699	600.00
No. 8. Stable.....	Nineteenth and Virginia Avenue NW.	Stables.....	21,406	2,700.00
No. 9. Warehouse No. 2	1514 Eckington Place NE..	Warehouse.....	36,160	4,938.00
No. 10. Garage and stable.	236-238 Nineteenth Street NW.	Garage and stable.....	29,221	9,000.00
Occupied by Motor Transport Corps:				
No. 11. Garage.....	141 Q Street NW.....	Garage.....	23,940	7,182.00
No. 12. Garage.....	Rear 141 Q Street NW.....	.....do.....	7,020	1,755.00
No. 13. Garage.....	Rear 205 Q Street NW.....	.....do.....	5,000	1,250.00
No. 14. Inclosed paved lot.	Rear 211 Q Street NW.....	.....do.....	7,400	444.00
Occupied by Purchase and Storage:				
No. 15. Zone Supply Office.	532 Seventeenth Street NW.	Office building.....	10,793	3,000.00
No. 16. Zone Supply Office.	1702-1704 F Street NW...	.....do.....	6,400	3,000.00
No. 17. Storehouse No. 10.	First and K Streets NE...	Storehouse.....	88,637	32,000.00
No. 18. Storehouse No. 5.	Square 673, lots 18-25.....	Field medical supply depot.	204,884	50,000.00
No. 19. Storehouse No. 5.	21 M Street NE.....	.....do.....	91,074	9,707.10
No. 20. Storehouse No. 11, fifth and sixth floors.	613 G Street NW.....	Storehouse.....	40,000	10,000.00
No. 21. Store No. 8 and storehouse No. 12 (old Census Building).	First and B Streets NW..	Storehouse and store.....	95,495	12,000.00
No. 22. Storehouse No. 3.	Fourth and Channing Streets NW.	Storehouse.....	458,120	24,160.00
No. 23. Storehouse No. 2.	1510-1512 Eckington Place NW.	.....do.....	19,200	3,900.00
Occupied by Corps of Engineers:				
No. 24. Searchlight testing station.	Lots 1680 and 1681.....	Searchlight testing station.	2.93 ac.	500.00
Occupied as Quartermaster Corps cantonment:				
No. 25. Patterson tract (Camp Meigs).	Fifth and Florida Avenue NE.	Camp Meigs.....	81 acres.	12,250.00
Total.....				225,046.10

Col. WHITAKER. I would like to ask permission of the committee to read a letter signed by Senator Smoot, as chairman of "The Joint Committee to Assign Space," in order to get it into the record.

The CHAIRMAN. Very well.

Col. WHITAKER. The letter reads as follows:

PUBLIC BUILDINGS COMMISSION.
Washington, D. C., March 10, 1920.

Maj. Gen. GEORGE W. BURR,
Assistant Chief of Staff, War Department.

Attention Maj. M. B. Stewart.

MY DEAR GENERAL: Receipt is acknowledged of your memorandum of the 25th ultimo, submitting a list of buildings which the War Department is desirous of renting during the fiscal year 1921 and making inquiry of this commission whether or not there is available in the District of Columbia, any Government-owned space now unoccupied, which might be assigned to your department in lieu of the rented quarters.

In reply you are advised that the list you submit has been very carefully gone over in this office and that there is not any space now at the disposal of the commission, which might be substituted for any of the buildings named in your list. The policy of the commission has been to first move into Government-owned buildings those activities of the Government which have been occupying the most expensive rented quarters. The rents you propose to pay in the present instance appear to be so reasonable that the commission would undoubtedly look with favor upon their retention until the more expensive quarters occupied by the Government were vacated.

The commission suggests that whenever practicable all leases contain a 30-day cancellation clause.

Yours, very truly,

REED SMOOT, Chairman.

NATIONAL GUARD.

STATEMENT OF MAJ. GEN. JESSE McI. CARTER, CHIEF MILITIA BUREAU.

The CHAIRMAN. Gen. Carter, the items for the National Guard in this printed draft of the bill are found on page 56?

Gen. CARTER. Yes, sir.

The CHAIRMAN. We will be very glad to hear an explanation of the various items.

Gen. CARTER. If it suits the committee, I would like to make a general statement as to the manner in which we drew up these estimates, and let Col. Wilson, who has had the detailed work to do, explain to you the items.

The CHAIRMAN. Very well.

Gen. CARTER. We estimated this year for a National Guard of 300 men per Senator and Congressman. The appropriation made by Congress in the bill approved July 11, granted the funds necessary for 200 men per Senator and Congressman, and under the law, as it stands, we are required to increase this amount by 50 per cent each year. This next year we would have 300 men per Senator and Congressman. In the last appropriation bill you made provision that the equipment, uniforms, arms, etc., for the National Guard should be issued without charge against the National Guard appropriation. We asked the War Department if that provision could be carried in this year's bill, and they told us it could not be, but that we would have to make our estimates on the basis of purchasing equipment to be used by the National Guard. Therefore, all of the items that have been estimated here must be retained in the bill.

At the present time we have not yet assembled an organization of 200 men per Senator and Congressman, but we are making quite rapid progress, and we anticipate that by June 30 we will have nearly that many. Many of the States are anxious to organize more than their allotted quota, if they have the appropriation. There are a number of men with prior training who desire to enlist in the National Guard, and they would like to take advantage of this opportunity to organize units. We have allowed them to do so, because a number of the States have done nothing toward reorganization. They have not done anything with respect to their National Guard, and with the appropriation that was available we could easily handle any States like New York, Wisconsin, and others that always have had a good National Guard, if they desired to have more than their allotment. We have given them more than their quota of 200 men per Congressman and Senator for this year. Ultimately, of course, we expect all of the States to come up to their proper representation in the National Guard.

The CHAIRMAN. You say you will nearly have the full quota by June 30?

Gen. CARTER. I think so. We can not say definitely, Mr. Chairman, because it is entirely at the option of a State as to whether they reorganize troops or not, and some of the States that are making preparations to organize quite a large contingent find the recruiting slowing up somewhat and do not present their units as rapidly as they thought. The State of Pennsylvania, for instance, intended to turn in before the 30th of June a complete Infantry division at peace strength, and they are making good progress, but so far we have only recognized a few units, a few companies of troops or batteries, and we do not know whether they will be able to complete their recruiting by the 30th of June or not.

The CHAIRMAN. Is that all?

Gen. CARTER. That is all I would like to say. If there is anything further that the committee would like to know, I would be glad to answer.

The CHAIRMAN. Of course, when we reach the separate items, we will desire to ask a few questions.

Mr. MCKENZIE. General, do you expect to continue the same practice that was in vogue prior to the war in requiring a State desiring to have a division to furnish the required amount of Artillery and Cavalry to go to make up a division in all its units?

Gen. CARTER. Yes, sir. Before we recognize a division headquarters and a division commander and his staff in a State we require that all of the units within the division shall have been completed.

Mr. MCKENZIE. Well, of course, it is not exactly pertinent, but have you ever thought over that matter and perhaps that we are pursuing a wrong course so far as the National Guard is concerned in requiring them to form Artillery units or perhaps Cavalry units? It has seemed to me that perhaps we ought to throw our strength toward Infantry organizations in the National Guard, because there are so many reasons why they could form a National Guard regiment of Infantry and do their drilling at night and they might get a company or a regiment in that way; whereas they would have no opportunity to practice as artillerymen.

Gen. CARTER. We do not find difficulty in getting artillerymen units organized in the National Guard, and of course if we can organize in the National Guard only Infantry we could not organize the higher tactical units that are required by law, because we would have to stop when war broke out and train enough Cavalry, Artillery, and Signal and Engineer troops to go with this Infantry in order to constitute divisions.

Mr. McKENZIE. I do not want to get into a discussion about this at this time, but we could have our Regular Establishment top-heavy in Artillery and Cavalry and the National Guard top-heavy in Infantry, and in that way perhaps have a more effective force.

Gen. CARTER. That is possible, but of course we are governed by the present law.

Mr. McKENZIE. Yes; I understand.

The CHAIRMAN. Don't you have a preponderance of Coast Artillery organizations in the seaboard States, in the National Guard, so far as you can effect the organization.

Gen. CARTER. We do, because of the necessity for their use in those States.

The CHAIRMAN. And then down along the Texas border you organized, as I understand it, Cavalry and Field Artillery?

Gen. CARTER. Yes, sir. We have recently allotted to the State of Texas a Cavalry division.

The CHAIRMAN. So you take into consideration the geographical location of the State, with the idea of possibly preparing the troops to fight in the kind of warfare that might happen to prove most effective in that particular section of the country?

Gen. CARTER. That is exactly what we try to accomplish.

The CHAIRMAN. We will be very glad to hear from you now, Col. Wilson. The first item under "Army, equipping and training the National Guard," is for purchase of animals for mounted use, \$2,000,000.

STATEMENT OF LIEUT. COL. L. C. WILSON, QUARTERMASTER CORPS, UNITED STATES ARMY.

Lieut. Col. WILSON. This amount covers the cost of the total number of horses, Mr. Chairman, required for the National Guard, based on, as Gen. Carter said, the 300 men per Congressman and Senator, but as it is estimated that by June 30 the organized, recognized, and equipped National Guard units will reach a strength of 150 to 175 men for each Senator and Representative, it is thought that \$2,000,000 will be sufficient for the horses to be furnished during the fiscal year 1921. The total estimated number of horses, multiplied by the unit price of \$190 per head, would mean over \$3,000,000, but we estimate that with the horses issued this year carried over until next year, \$2,000,000 will be sufficient.

The CHAIRMAN. The next item is, "Forage, bedding, etc."

Lieut. Col. WILSON. Of course, that is based upon the number of horses that we estimated to be purchased from the \$2,000,000, calculated upon the cost per unit of forage.

The CHAIRMAN. Is there any prospect of forage going down in price in the next fiscal year?

Lieut. Col. WILSON. I am not prepared to say.

The CHAIRMAN. Of course it was very high during the war.

Lieut. Col. WILSON. Our estimate is rather conservative, and took into consideration the possibility of a decrease in the cost of forage. We based it on \$170 per horse per year.

The CHAIRMAN. How do you get the 20 cents?

Lieut. Col. WILSON. There is a fraction there. I was speaking in round numbers. It is \$170.193.

The CHAIRMAN. I see. The next item is for compensation of help.

Lieut. Col. WILSON. Compensation for help for care of material, animals, and equipment. These helpers are members of the organizations detailed at a compensation to take care of the horses and equipment.

The CHAIRMAN. What is the compensation?

Lieut. Col. WILSON. The compensation ranges about an average of \$75 per man per month.

The CHAIRMAN. And how many men do you propose to employ?

Lieut. Col. WILSON. The law provides not exceeding five per troop, battery, or company. They may have three if they can get competent men who can perform the necessary duties with 32 horses assigned to that organization.

The CHAIRMAN. The next is expenses for camps of instruction.

Lieut. Col. WILSON. This includes a number of subitems, pay of officers, pay of enlisted men, subsistence of the men while in camp, transportation of both officers and men and equipment to and from the camps, outdoor target practice, national matches, miscellaneous expenses, camps of instruction, and outdoor target practice and transportation.

The CHAIRMAN. When do you propose to hold the camps?

Lieut. Col. WILSON. During the months that are most suitable for the respective States; generally in the summer time—in September.

The CHAIRMAN. Will you hold them this year in September?

Gen. CARTER. The exact date that we will hold them is now determined by the department commander, who knows when those units can best spare the time from their ordinary pursuits, but we presume that in the majority of cases the field instruction will be held in September.

The CHAIRMAN. Of course, unless you use this money next September it will not be necessary to have such a large amount, because the bill for the fiscal year 1922 would carry the sum necessary for the camps in September, 1921.

Gen. CARTER. Yes; we are estimating that in this coming September, 1920, we will have this number of troops in camp, that we will have to pay railroad fare to and from encampments for that number.

The CHAIRMAN. That was what I was trying to find out. You feel that you are going to have this large number of national troops in camps after the first of July?

Gen. CARTER. Well, we have estimated that we will send into instruction camps, either in this coming fall or the ensuing spring, all of the men in the National Guard for at least 15 days. Some States, Mr. Chairman, desire to send their officers and noncommissioned officers to camps of instruction in advance of this 15 days' training in order that they may receive some special preliminary training, and we have granted that authority whenever we have had sufficient money, because it is helpful and extends the amount of

field training that is given these officers and men. While they are on that training, they get the full pay of Regular Army and their subsistence, and that, of course, has been estimated in this total amount.

Mr. GREENE. What would probably be the policy, General, with regard to those States in which the organization is so incomplete that you may not have tactical units in sufficient numbers to make anything like a drilling squad?

Gen. CARTER. We can send them to other States where we combine them with other units. We require by regulation that no unit shall go to camp that has not been organized more than two months, and no individual shall receive pay who has not had at least 14 drills prior to going into camp, so that he can profit by the instruction he receives there.

The CHAIRMAN. The next is expenses of selected officers and enlisted men, military service. How many such officers and men do you hope to send to this school?

Lieut. Col. WILSON. We have based the estimate, Mr. Chairman, on 120 first lieutenants, 360 sergeants. That is all.

Mr. MCKENZIE. Mr. Chairman, I would suggest that—I presume you intend to put these statements that you have there into the hearing?

Lieut. Col. WILSON. Yes, sir: exactly.

The CHAIRMAN. The next is pay and allowance of officers, National Guard, Militia Bureau, \$12,000.

Lieut. Col. WILSON. That is for the officers provided by law, detailed to the Militia Bureau from the National Guard.

The CHAIRMAN. That is the amount that has been carried for some time.

Lieut. Col. WILSON. Yes, sir.

The CHAIRMAN. The next is pay of property and disbursing officers for the year.

Lieut. Col. WILSON. That is for the compensation which we have figured out in detail as to the amounts required for the payment of these officers in each State.

The CHAIRMAN. Will you kindly put the detail of that into the hearing?

Lieut. Col. WILSON. Yes, sir.

(Included in data following.)

The CHAIRMAN. Do any of the States furnish you quarters for the Regular Army officers who are in the State on National Guard duty? The law originally contemplated the use of a room in a State capitol building, or something of that kind.

Lieut. Col. WILSON. Most of the States do, Mr. Chairman. In one or two instances the States claim they have no proper facilities and in view of that fact we have a specific appropriation for providing offices for the Regular officers and instructors.

The CHAIRMAN. \$66,750 is predicated on how many disbursing officers?

Lieut. Col. WILSON. One for each State and Territory and the District of Columbia.

The CHAIRMAN. General expenses, equipment and instruction, National Guard, \$1,115,000.

Lieut. Col. WILSON. That embraces a number of minor items, Mr. Chairman, from blank forms to prizes and entrance fees, incidental expenses, printing, etc. In connection with that I would like to add the statement that at the time these estimates were prepared we had not started to issue motor equipment to the States, since authorized, and therefore did not include oil and fuel for these trucks and tractors and other motorized equipment, and we have made up an estimate since the submission of these estimates proper, based upon an allowance according to the number of authorized armory drill periods for the National Guard and 15 days in camp, for the reasonable use of the trucks and other motor equipment, and have arrived at an estimate of \$500,000 for this purpose, including repairs to motor equipment, tractors, and tanks for the year.

Mr. McKENZIE. That would make the item \$1,615,000?

Lieut. Col. WILSON. Yes, sir.

Mr. GREENE. I suppose by the introduction of this motorized matériel you are interesting a good many men in the National Guard who by occupation might be chauffeurs or something of that kind?

Gen. CARTER. Yes, sir; we find that the motorized artillery, the heavier units, which are motorized, are much more popular than the light artillery which is horse drawn.

Mr. GREENE. I should think a considerable number of the civilian population would be attracted by the idea of training in this way, in their own civil interests, although under military direction at the time.

Lieut. Col. WILSON. We find that caretakers and mechanics, to be assigned to these truck units, may be taken right from their civilian occupations in this kind of work, as you suggest.

Mr. GREENE. You are likely to get some very expert men, too, especially if you are in a region where there is a good deal of high-skilled mechanical employment, or men who are in the automotive lines.

Lieut. Col. WILSON. Yes, sir.

The CHAIRMAN. The next item is \$50,000. What is that?

Lieut. Col. WILSON. That is the estimated amount for the travel of Federal officers and noncommissioned officers in carrying out the provisions of section 93.

The CHAIRMAN. Have you an itemized statement of that?

Lieut. Col. WILSON. No, that seems to be basic, Mr. Kahn. The number of trips we are unable to state.

The CHAIRMAN. How much have you been using for that purpose, or had you been using for that purpose before we got into the war?

Lieut. Col. WILSON. The same as this in proportion to the number of men that we then had.

The CHAIRMAN. Now, take the next item.

Lieut. Col. WILSON. For travel of Federal officers and noncommissioned officers changing stations. That is a very conservative estimate we feel, \$10,000.

Mr. GREENE. That phrase, "change of station"—does that mean visits of inspection within his own jurisdiction?

Lieut. Col. WILSON. No, sir.

Mr. GREENE. It means his assignment to or from National Guard duty?

Lieut. Col. WILSON. Yes, sir.

Mr. GREENE. Now, how do you cover his tours of inspection?

Lieut. Col. WILSON. That is covered by another appropriation for making inspections—the one preceding this.

The CHAIRMAN. The one preceding that, \$50,000?

Lieut. Col. WILSON. Yes, sir.

The CHAIRMAN. Travel of Federal officers and noncommissioned officers on visits of instruction.

Lieut. Col. WILSON. That is the internal travel for the National Guard after the officers report to the organization as instructors.

Mr. GREENE. Now, there you see, aren't we now covering pretty much the same duties in two items?

Lieut. Col. WILSON. Well, we would be very glad and happy, in fact, Mr. Chairman, if they could be combined.

Gen. CARTER. They have always been separated. One is inspection and the other is instruction.

Mr. GREENE. What is the difference?

Gen. CARTER. When a unit is presented, for instance, for Federal recognition we send a Federal officer to see if it complies in all respects with all the requirements of law and is suitable for recognition. That is called a visit of inspection. After it has been recognized we send an officer there to give instruction when it is necessary for him to make a visit and that is a visit of instruction. Now, they have been paid from two appropriations, and if we could combine them we could utilize them to better advantage.

The CHAIRMAN. There are two officers, then, utilized, or is it the same man who inspects and instructs?

Gen. CARTER. It may be the same one, but he is on a different duty on the different occasions.

Mr. GREENE. Is that distinction of duty of sufficient account to made a distinct bookkeeping charge against each separately?

Lieut. Col. WILSON. I think not, sir; and we certainly would be very appreciative if it could be combined, because it would be a practical benefit to us in these accounts.

Gen. CARTER. We have to be very careful in wording an order now, as to whether the man is on a visit of inspection or on a visit of instruction, in order to know from which appropriation his expenses are to be paid.

Gen. LORD. The combining clause at the end makes each one of these items available interchangeably.

The CHAIRMAN. Of course you have a similar clause for the National Guard that you have for the Regular Army, making all of the items payable as one fund?

Gen. LORD. For pay of the Army?

The CHAIRMAN. Yes.

Lieut. Col. WILSON. And there are other items in connection with travel—in fact, about five or six of them, Mr. Chairman, and if they could all be combined under one subhead, it would be a great advantage, although we recognize the fact that Congress desires to keep them separate at the present time.

Mr. GREENE. Of course it is the policy, a wise one, to avoid lump-sum appropriations, for the very necessary purposes of scrutiny afterwards, but the question comes up whether by the blanket clause which combines them in one fund, whether any real economic saving is accomplished by it. It only entails more paper work upon you people.

Lieut. Col. WILSON. Absolutely, with no resulting benefit to the Government.

The CHAIRMAN. It probably makes the thing more easily handled on the floor. You probably would have men on the floor fighting a very large amount of money that had been lumped together; whereas they would not be inclined to fight it if it was segregated into three or four smaller amounts.

Lieut. Col. WILSON. Yes, sir.

Mr. GREENE. And for a reason which exposes the fallacy of it, that if it were apportioned in small amounts, they would not know the reasons for them, and would pass over them; and if they found them in a large lump sum, they would attack them for the same reason, that they did not know.

Lieut. Col. WILSON. Yes, sir.

Gen. LORD. Under the law as it appears in the current act, if you need a little more than \$10,000 for item 8, that is the travel of Federal officers and noncommissioned officers changing station, and you had a little surplus under the next, \$50,000 for travel of Federal officers and noncommissioned officers on visits of instructions you could use a portion of your \$50,000 to augment the \$10,000.

The CHAIRMAN. But suppose you lump all these sums and then you had a deficiency in them; you could not use any of the money that is appropriated in this item for any other purpose than travel for training for paying the deficiency.

Gen. LORD. As far as the law is concerned and accounting officials of the Treasury are concerned, you could use every penny of this amount that is appropriated for the purchase of animals for mounted units.

The CHAIRMAN. I see. That would come under "Equipping the National Guard."

Gen. LORD. The appropriation is for arming, equipping, and training the National Guard, and all the items that enter into it.

The CHAIRMAN. So you could use any item here, where you had a surplus, for paying a deficiency in any other item?

Gen. LORD. Yes, sir.

Mr. GREENE. It comes, then, simply to the question of what colored spectacles you put on when you write the figures down.

Gen. CARTER. Our difficulty is largely, I think, in the matter of bookkeeping, in order that we may report how we spent this money. Last year was the first year in which you put the provision in that that should constitute one sum to be expended in equipping, training, etc.; before that we had to settle with the Auditor for the War Department if we made an expenditure out of the wrong appropriation.

Lieut. Col. WILSON. We still make reports on the items.

Gen. CARTER. I know we do, but we can transfer from one to the other. We could not before.

The CHAIRMAN. Travel of Federal officers and noncommissioned officers connected with camps of instruction. Explain that, please, Colonel.

Lieut. Col. WILSON. That is another of the several items of travel allowances, Mr. Kahn.

The CHAIRMAN. It is all figured out according to the experiences of the past?

Lieut. Col. WILSON. Yes, sir; because it would be to our interest to reserve enough under each subhead to look out for our interests during the year.

The CHAIRMAN. Inspection of target ranges.

Lieut. Col. WILSON. That is the amount required for travel of Federal officers and noncommissioned officers in connection with the inspection of target ranges, \$2,250.

The CHAIRMAN. Inspection of matériel, Field Artillery, Coast Artillery, and Signal Corps.

Lieut. Col. WILSON. If it could be done, we would suggest the words "and Tank Corps" be added there, so there could be no question about using it for that purpose.

The CHAIRMAN. Well, wouldn't it be better to put it immediately after the words "Coast Artillery"?

Lieut. Col. WILSON. Yes.

The CHAIRMAN. Tank Corps and Signal Corps?

Lieut. Col. WILSON. Yes, sir.

The CHAIRMAN. Transportation of supplies, \$300,000.

Lieut. Col. WILSON. We have estimated that at \$300,000, Mr. Chairman. Our bills for transportation for this year have not begun to come in yet to any appreciable extent, and we are unable to figure on the exact cost of this transportation item, but we estimated that \$300,000 would be conservatively low.

Mr. GREENE. With the return of the former National Guard units that composed the war Army to their home stations, and their demobilization, was any considerable quantity of military supplies left for storage with States which can be now utilized in connection with rehabilitating the National Guard?

Gen. CARTER. No, sir; under the law that was all turned over to the Federal Government when they were called into Federal service and we have had to re-equip the entire National Guard. Some of the States had property that had been purchased from State funds, and they turned that into the Federal Government, and we are now reimbursing them by the issue of property of like kind, of an equal value.

Mr. GREENE. So that for answering any questions on the floor, we could state the general idea that they are refitted anew?

Gen. CARTER. Yes, sir.

The CHAIRMAN. The next item is for expenses of sergeant instructors, \$75,000.

Lieut. Col. WILSON. Will you pardon me just a moment? I might add also that inspectors of the Federal Government were sent around to the various States to see to the clean up of the property and that it was all taken into the Federal service, so that there was nothing left in the States except minor articles, unserviceable material.

Mr. GREENE. I was only anticipating a possible question and making sure we understood the answer.

The CHAIRMAN. Now, expenses of sergeant instructors.

Lieut. Col. WILSON. These expenses, Mr. Chairman, are for the purpose of paying for the quarters of the sergeant instructors of the Regular Army detailed to the National Guard. Since this estimate was submitted the cost of these quarters has gone up so appreciably, in some of the States, as to bring the cost above the heretofore average of \$30 a month in some instances, and we feel that now the

estimate is rather low. In addition to that, while we have about 160 sergeant instructors at present on detail with the National Guard it is estimated that that number will be doubled during the coming year, and at the rate of \$32.50 and \$35 for the cost of quarters, these sergeant-instructors estimate should be increased to \$175,000.

The CHAIRMAN. The next is office rent.

Lieut. Col. WILSON. That is an item that I mentioned a while ago Mr. Chairman, in cases where we find we can not get them from the States.

The CHAIRMAN. What is the average rental?

Lieut. Col. WILSON. I know of one or two instances where they got offices for \$30 and \$35 a month, and in some cases less.

The CHAIRMAN. About how many States furnish offices free?

Lieut. Col. WILSON. The great majority of them. I think there are three cases where we are renting offices at present.

The CHAIRMAN. And you say the offices run in those States about how much?

Lieut. Col. WILSON. About \$30 a month. In one State we got the use of the post office through the Post Office Department. We are getting along any way we can on that line by administrative action.

The CHAIRMAN. Pay of National Guard drill.

Lieut. Col. WILSON. This estimate, Mr. Chairman, is based upon the \$15 rate for privates, which is not the basic rate of pay for the Army proper. This is the rate prescribed by the act of June 3, 1916, which says the rate of pay shall be that prescribed by the act for the Regular Army of that date, which is still continuing. We have also an estimate based on the \$30 a month rate, but this estimate we have before us is for the old rate.

The CHAIRMAN. Is there anything else on there?

Mr. GREENE. That estimate on the \$30 a month basis will be put into the hearing?

Lieut. Col. WILSON. Yes, sir.

(Included in data herewith.)

The CHAIRMAN. Arms, uniforms, equipment, etc., field service, National Guard, \$40,000,000.

Lieut. Col. WILSON. That is the estimated cost of equipping the National Guard next year less what has been furnished this year up to June 30, and replacing such of it as has become unserviceable.

The CHAIRMAN. And that is based upon a total strength of the National Guard of how many men?

Lieut. Col. WILSON. One hundred seventy-eight thousand, seven hundred and seventy-six.

The CHAIRMAN. Will you really have that many men in the National Guard in the next fiscal year?

Lieut. Col. WILSON. I could not say, sir. I do not know.

Gen. CARTER. We are in this situation with respect to that, Mr. Chairman: That is the number that we will authorize and if, as I said before, the States want to bring in more, and they can furnish good troops and they have means for caring for them, we do not like to turn them down. It is possible that if we do not get the 178,000 by the end of the fiscal year 1921, we could get along with less money, but if you give us that appropriation for that total number of men, as we come toward the middle of the year we can take in a larger number, if the States find they want to organize the units, and carry them with that amount.

Mr. GREENE. The Federal Government has on hand a very large number of rifles at the present time, hasn't it?

Gen. CARTER. They have some articles, but we made inquiry and insisted on knowing what, if any, articles they could furnish without cost this year, and we received instructions that we were to defend these estimates on the basis of purchases. Of course, if we buy from the Regular Army, it is just taking money from one pocket and putting it into another, but it reimburses the Regular Army appropriations so they can replace their stock.

The CHAIRMAN. But can they? Don't the money have to go into the miscellaneous fund item in the Treasury and then they have to come to Congress again for additional appropriations for replenishing the stock of the Regular Army?

Gen. LORD. Not if it is necessary to replace the articles sold.

Lieut. Col. WILSON. The law heretofore provides specifically for it going back to replacing stock.

The CHAIRMAN. That is the law?

Lieut. Col. WILSON. It was the practice before the current year.

The CHAIRMAN. Congress for a good many years now has been trying to discourage this revolving fund idea—for that is what it amounts to. I am surprised to find that there is some place in the Army legislation that still allows a revolving fund.

Gen. LORD. That would not be a revolving fund. If it is necessary, something that is absolutely necessary for the operation of the corps that sells the supplies, the money is paid to that corps to replace the articles that they need. The same thing obtains with reference to the sale of commissary supplies. Supplies are sold to officers, commissioned officers, as a convenience. The supplies are bought originally for the enlisted personnel, so that the money that is received from the sale to officers, to the extent that they are sold for that purpose, goes back to the appropriation for the purpose of replacing the articles which were bought originally for the enlisted personnel.

The CHAIRMAN. I understood that that was the custom in the Commissary Department. I understood that where officers have their uniforms made up by the Government that money goes back again into the fund which paid for the clothing, and so on, originally. But on articles like rifles and ammunition, I did not know that it went back again into the original fund.

Gen. LORD. In the act of November 9, 1918, which was a deficiency bill from the appropriation committee, a specific provision is made that the proceeds from the sale of surplus supplies will go back to miscellaneous receipts of the Treasury. If these can be denominated "surplus supplies" under the conditions, the law would require the placing of the receipts in the miscellaneous receipts of the Treasury.

Mr. McKENZIE. Now, of course I do not look upon these rifles and field guns as surplus. They are reserve, and placing them in the hands of the National Guard does not destroy their usefulness to the military reserve, and I can not see why at this time we should be asked to appropriate \$40,000,000 for arms, artillery, and material of that sort to arm our National Guard.

Gen. CARTER. Of course the Militia Bureau does not know what the state of the supplies is. We do not control that part of this, and we asked if we might continue to issue without charge, as has been done heretofore; then in the submission of estimates we could presume that they would be issued.

Mr. McKENZIE. I think we ought to require them to be issued.

Now I just want to put this remark into the record, it was testified before this committee not very long ago, that we would have artillery enough to arm an army of 5,000,000 men. That was testified to before this committee.

Gen. LORD. What are we going to do with it? Let it rot?

I would like to suggest that this has been brought up by a statement that application, request, was made as to whether or not these supplies were available. They were informed that they were not. This would be a matter, as far as rifles and field artillery is concerned, that should properly be answered, I think, by the Chief of Ordnance.

Mr. GREENE. Here is the proposition, General: It is manifest to anybody, without taking an inventory, that at the conclusion of the war, we were left with immense quantities of war matériel, supplies, far beyond in some lines, the immediate, or immediately prospective needs of the regular establishment and that they were held in storage. Many of these things are in the nature of ordnance, field artillery, for instance, mobile artillery, the constant retention of which in storage means not only the expense of such maintenance, but their gradual deterioration, not only in their physical condition but in their ageing against the ultimate use which a more modern weapon when the time came might supply. It seems to me absurd as a military policy or an economic one for those guns to stay in storage and not be used for the training purposes of the National Guard, while all the time the Army expects in its progressive study perhaps in the next emergency to be using better types of guns. Why couldn't these guns be in use now? Why couldn't these rifles be in use now, and various other similar hold overs from the war, the bulk of which we know represents far more than the immediate or prospectively immediate regular Army uses? What is the use of purchasing new material right in the fact of that?

Gen. CARTER. I see no objection to doing that, but as I tell you, in order to be able to defend our estimates, we asked for instructions or information as to what would be done in the way of issuing equipment, and we were informed that "the language in the current appropriation act, beginning at the next to the last line on page 25, down to and including the third word in line 7, page 26, public number 7, Sixty-sixth Congress, providing for a free issue of equipment to the National Guard has been eliminated from the Army appropriation bill for the fiscal year 1921, as proposed in the aforesaid committee print. Your defense of the estimates for the support of the National Guard for the fiscal year 1921 in accordance with the foregoing is approved."

The CHAIRMAN. What is that language that you refer to? We can insert that in the estimates for 1921.

Mr. GREENE. You, of course, are not responsible. You have consulted your military superiors, and you have had your directions, and so the question does not lie to you in that personal sense, but it is very easy by a declaration from such proper military authority to say that certain things which are known to be in physical existence are not available. That does not take away the economic responsibility of making use of things in physical existence and consulting a proper availability for their use, and that is a question we want to follow up.

Gen. CARTER. I would suggest, if you do embody the same language in the bill that you did last year, that you still make some provision, because I think you will find that of some articles, such as shoes, the Army has not enough—will not have enough for issue beyond its own needs, and you will have to purchase those.

The CHAIRMAN. We can put in a few words that will take care of that.

Gen. CARTER. All right, sir.

Mr. GREENE. But we could consult some authorities that are charged with supply, and the declaration of availability of supply, to find out how much they ought to give the general. We have been trying to see if we can get it for him.

The CHAIRMAN. The language in the appropriation act for the support of the Army for the fiscal year ending June 30, 1920, and for other purposes, approved June 11, 1919, is as follows:

The Secretary of War is hereby authorized to issue from stores now on hand and purchased for the use of the Army such articles of clothing and equipment matériel as may be needed by the National Guard organized under the provisions of the act entitled "An act for making further and more effectual provision for the national defense, and for other purposes," approved June 3, 1916.

This issue shall be made without charge against militia appropriations and shall be reimbursed in kind for all Federal property brought into the service by State troops: *Provided*, That the provisions of section 62 of the act entitled "An act for making further and more effectual provision for the national defense, and for other purposes," approved June 3, 1916, shall be considered fulfilled if the first strength mentioned therein be attained by June 30, 1920, and the other increments provided therein be attained by successive years thereafter: *Provided further*, That this shall not prevent any State from compliance with the provisions of section 62: *Provided further*, That the appropriations and provisions of this act referring to the National Guard shall become applicable and available upon the approval of this act.

I want that in the record, and we can modify it to take in the material, ordnance, etc.

Gen. LORD. That provision, as the original appeared, I think, in the House bill, had the word "surplus" inserted, and that was stricken out in the Senate.

Gen. CARTER. It was thought that if we left that in there might not be anything declared surplus.

The CHAIRMAN. We can change that language to meet Ordnance material as well as clothing.

The next item is field artillery, matériel, National Guard, on page 58. For the purpose of manufacturing field artillery matériel for the National Guard, \$9,000,000. Do you know how much of that kind of material the War Department has at the present time?

Lieut. Col. WILSON. I could not say in detail, Mr. Kahn, but from general knowledge I would say it had some of it.

The CHAIRMAN. Your \$9,000,000 is predicated upon the strength that you have stated heretofore, 176,000 men?

Lieut. Col. WILSON. So far as the Field Artillery is concerned, yes, sir.

The CHAIRMAN. How many men would be in the Field Artillery of the National Guard under that strength of the Guard?

Lieut. Col. WILSON. I will put that in the record. I have it here, but I do not want to take the time to pick it out.

Estimated number of batteries of Field Artillery, National Guard, during the fiscal year 1921.....	134
Number of officers.....	872
Number of enlisted men.....	16,530

The CHAIRMAN. The next item is practically similar with respect to manufacturing and procuring field material for the National Guard in the several States and Territories and the District of Columbia, but to remain the property of the United States and to be accounted for in the manner now prescribed by law. What kind of material is that?

Lieut. Col. WILSON. That was mainly to take care of tractors for motorized artillery outfits.

The CHAIRMAN. Do you know whether the department has some of those on hand?

Lieut. Col. WILSON. I understand so.

The CHAIRMAN. I do too.

Mr. GREENE. Is there an announced policy about the distribution of motorized field artillery to the National Guard yet?

Lieut. Col. WILSON. In what way?

Mr. GREENE. Because the subject is more or less indeterminate in the supply of the Regular Army itself.

Gen. CARTER. They have announced that we will motorize all 55 millimeter field artillery regiments, and those armed with heavier guns; that at present they will not issue any motorized equipment for the 75 millimeter.

Mr. GREENE. Do you carry in the National Guard any of the trench warfare, lighter ordnance?

Lieut. Col. WILSON. No, except that that will be issued to Infantry, like 37 millimeter.

Mr. GREENE. And are we fooling with the gun to be used against tanks?

Gen. CARTER. No, we have not been furnished with any for the National Guard, nor is that included in our equipment.

Mr. GREENE. Yours then is all along the old line of calibers; that is the old line that was the modern one?

Gen. CARTER. It is divisional artillery.

The CHAIRMAN. That concludes the items under the head of the National Guard, and we are very much obliged to you. I understand that you will fill in the details in the hearings.

Lieut. Col. WILSON. Yes, sir.

The following is an approximate estimate of the cost of arming, equipping, training, and maintaining the National Guard, based on 300 men for each Senator and Representative in Congress, as shown in tables of organization of the United States Army, 1917:

Statement by appropriations of amount required for National Guard, based on 300 men for each Senator and Representative in Congress.

[Fiscal year 1921.]

"Arming, equipping, and training the National Guard"	¹ \$33, 408, 678. 79
"Arms, uniforms, equipment, etc., for Field Service, National Guard"	40, 000, 000. 00
"Field Artillery material, National Guard"	{ 9, 000, 000. 00
	2 3, 600, 000. 00
Total	86, 008, 678. 79

NOTE.—The above statement shows the armory drill pay at the old rate. If the new rate is to be used for this purpose the total amount under the appropriation, "Arming, equipping, and training the National Guard, 1921," will be \$40,500,575.79, and the grand total required for the National Guard, \$93,100,575.79.

¹ On account of authorization for four battalions of Tank Corps and additional item added at hearing.

² Item included in estimate submitted by Secretary of the Treasury.

Statement by subappropriations under the appropriation "Arming, equipping, and training the National Guard, 1921," required for National Guard, based on 300 men for each Senator and Representative in Congress.

"Purchase of animals for mounted units".....	\$2,000,000.00
"Procurement of forage, bedding, etc., for animals".....	3,440,763.20
"Compensation of help for care of matériel, animals, and equipment".....	3,077,700.00
"Expenses, camps of instructions".....	¹ 9,796,672.19
"Expenses, selected officers and enlisted men, military service schools".....	¹ 367,680.40
"Pay and allowance of officers, National Guard, Militia Bureau".....	12,000.00
"Pay of property and disbursing officers for the United States".....	66,750.00
"General expenses, equipment and instruction, National Guard".....	² 1,615,000.00
"Travel of Federal officers and noncommissioned officers making inspections".....	50,000.00
"Travel of Federal officers and noncommissioned officers changing stations".....	10,000.00
"Travel of Federal officers and noncommissioned officers on visits of instruction".....	50,000.00
"Travel of Federal officers and noncommissioned officers, connection with camps of instruction".....	75,525.00
"Inspection of target ranges".....	2,250.00
"Inspection of material, Field Artillery, Coast Artillery, Signal Corps, and Tank Corps".....	3,750.00
"Transportation of supplies".....	300,000.00
"Expenses, sergeant-instructors".....	³ 175,000.00
"Office rent, inspector-instructors".....	15,000.00
"Pay of National Guard (armory drill)".....	12,350,588.00
Total.....	33,408,678.79

NOTE.—The above statement shows the armory drill pay at the old rate. If the new rate of pay is to be used for this purpose the total amount required under the subappropriation "Pay of National Guard, armory drill," will be \$19,442,485, and the grand total under the appropriation "Arming, equipping, and training the National Guard, 1921" will be \$40,500,575.79.

Total strength required for National Guard, based on 300 men for each Senator and Representative in Congress.

Arm of service.	Officers.	Enlisted men.	Total.
Infantry.....	3,622	91,519	95,141
Cavalry.....	767	14,880	15,647
Field Artillery.....	1,552	30,715	32,267
Engineers.....	422	9,013	9,435
Signal.....	178	3,310	3,488
Sanitary.....	221	3,806	4,027
Coast Artillery.....	386	10,955	11,341
Trains.....	166	5,312	5,478
Tank Corps.....	128	1,824	1,952
Total.....	7,442	171,334	178,776

Authorization for four battalions of Tank Corps included in above figures.

APPROPRIATION: "ARMING, EQUIPPING, AND TRAINING THE NATIONAL GUARD, 1921."

Subappropriation: "Purchase of animals for mounted units."

To provide for the purchase, under such regulations as the Secretary of War may prescribe, of horses conforming to the Regular Army standard for the use of Cavalry, Field Artillery, Engineer companies, Signal and Sanitary units of National Guard, horses not to exceed 32 for any one battery, troop, or company, or 4 for each battalion or regimental headquarters.

¹ On account of authorization for 4 battalions Tank Corps.

² Additional item added at hearing.

³ Amount increased at hearing.

The organizations included in the strength based on 300 men for each Senator and Representative in Congress are as follows:

Cavalry:	Horses.
5 regiments.....	2,080
27 squadrons.....	3,564
5 headquarter troops.....	160
10 machine gun troops.....	40
14 troops.....	448
Field Artillery:	
28 regiments.....	6,272
15 battalions.....	1,500
1 headquarters company.....	32
4 batteries.....	128
Engineers:	
6 regiments.....	1,176
12 battalions.....	1,200
7 companies.....	224
Signal:	
8 battalions.....	800
18 companies.....	576
Sanitary:	
32 field hospital companies.....	1,024
31 ambulance companies.....	992

Summary.—20,216 horses at \$190 per horse equals \$3,841,040.

NOTE.—No allowance has been included in the above estimate for the units comprising the trains included in the strength of 169,510 men.

The above amount covers the cost of the total number of horses required for the National Guard, based on 300 men for each Senator and Representative in Congress, but as it is estimated that by June 30, 1920, the strength of the National Guard, organized, recognized, and equipped, will reach a strength of approximately 150 men for each Senator and Representative, it is thought that \$2,000,000 will be sufficient for the horses to be furnished during the fiscal year 1921.

Subappropriation: "Procurement of forage, bedding, etc., for animals."

To provide for the procurement of forage, bedding, shoeing, veterinary services, and supplies, for horses for the organizations included in the strength based on 300 men per Senator and Representative in Congress.

The allowance for one horse per year is as follows:

10 pounds oats per day—365 days, at \$2.56 per hundred pounds.....	\$91.250
14 pounds hay per day—365 days, at \$1.25 per hundred pounds.....	63.875
100 pounds straw per month—12 months, at \$0.40 per hundred pounds.....	4.800
0.08 ounce rock salt per day—365 days, at \$0.75 per hundred pounds.....	.137
1 gill vinegar per day—365 days, at \$0.30 per gallon.....	3.321
5 pounds horseshoes per month—12 months, at \$6.02 per hundred pounds...	3.612
1 pound horseshoe nails per month—12 months, at \$0.26 per pound.....	1.560
1½ pounds coal per month—12 months, at \$5 per short ton.....	.038
Veterinary supplies, 40 cents per horse for three months.....	1.600

Total..... 170.193

The 20,216 horses, shown on Table (a), at \$170.20 per year for the forage, bedding, etc., will require \$3,440,763.20.

No allowance has been included in the above estimate for the units comprising the trains included in the strength of 169,510 men.

Subappropriation: "Compensation of help for care of matériel, animals, and equipment."

To provide for the compensation of competent help for the care of matériel, animals, and equipment thereof, based on the following tables, the men to be compensated to be duly enlisted men of the organizations, and not to exceed five for each battery, troop, or company, etc., \$3,077,700.

Allowance for horses per month per organization.

1 battery Field Artillery, 32 horses.....	\$450
1 troop of Cavalry, 32 horses.....	375
1 machine-gun troop, 4 horses.....	75
1 Signal Corps company, 32 horses.....	375
1 Engineer company, 32 horses.....	375
1 ambulance company, 32 horses.....	375
1 Field Hospital company, 32 horses.....	375
1 headquarters troop, Cavalry, 32 horses.....	375
1 headquarters company, Field Artillery, 32 horses.....	375
1 separate regimental headquarters, Field Artillery, Cavalry, Signal, or Engineers, 4 horses.....	75
1 separate battalion or squadron headquarters, Field Artillery, Cavalry, Signal, or Engineers, 4 horses.....	75

The following table shows the amount of money required for the care of horses for the organizations enumerated in the preceding table:

Cavalry:

5 regiments—60 troops, 5 headquarter troops—	
65×\$375.....	\$24,375
27 squadrons—108 troops, 27 squadron headquarters—	
108×\$375.....	40,500
27×\$75.....	2,025
5 headquarters troops—	
5×\$375.....	1,875
10 machine-gun troops—	
10×\$75.....	750
14 troops—	
14×\$375.....	5,250

Field Artillery:

28 regiments—168 batteries, 28 headquarters companies—	
196×\$450.....	88,200
15 battalions—45 batteries, 15 battalion headquarters—	
45×\$450.....	20,250
15×\$75.....	1,125
1 headquarters company—	
1×\$375.....	375
4 batteries—	
4×\$450.....	450

Engineers:

6 regiments—36 companies, 6 regimental headquarters—	
36×\$375.....	13,500
6×\$75.....	450
12 battalions—36 companies, 12 battalion headquarters—	
36×\$375.....	13,500
12×\$75.....	900
7 companies—	
7×\$375.....	2,625

Signal:

8 battalions—24 companies, 8 battalion headquarters—	
24×\$375.....	8,000
8×\$75.....	600
6 radio companies.....	18 companies—
6 wire companies.....	
6 outpost companies.....	
18×\$375.....	6,750

Sanitary:

32 Field Hospital companies—	
32×\$375.....	12,000
31 Ambulance companies—	
31×\$375.....	11,625

Allowance for one month, \$256,475; \$256,475×12 months=\$3,077,700.

NOTE.—No allowance is made for the expense of compensation of help for any horses required for the organizations comprising the trains included in the strength of 169,510 men.

Subappropriation: "Expenses, camps of instruction."

To provide for the participation of the whole or any part of the National Guard in encampments, maneuvers, or other exercises, including outdoor target practice and field and coast defense instruction, either independently or in conjunction with any part of the Regular Army, and there may be set aside from the funds apportioned for that purpose and allotted to any State, Territory, or the District of Columbia such portion of said funds as may be necessary for the payment, subsistence, transportation, and other proper expense of such portion of the National Guard of said State, Territory, or the District of Columbia, as shall participate in such encampments, maneuvers, or other exercises, including outdoor target practice and field and coast defense instruction; and the officers and enlisted men of such National Guard while so engaged shall be entitled to the same pay, subsistence, and transportation as officers and enlisted men of corresponding grades of the Regular Army are or hereafter may be entitled to by law. To provide for camps of instruction for the instruction of officers and enlisted men of the National Guard. Such camps shall be conducted by officers of the Regular Army detailed by the Secretary of War for the purpose, and may be located either within or without the State, Territory, or District of Columbia to which the members of the National Guard designated to attend said camps shall belong. Officers and enlisted men attending such camps shall be entitled to pay and transportation and enlisted men to subsistence in addition at the same rate as for encampments or maneuvers for field and coast defense instruction: *Provided*, That of this sum so much thereof as may be necessary is authorized to be expended for the payment of transportation of troops of the Regular Army in connection with joint camps of instruction of the National Guard: *Provided*, That of this sum as much thereof as may be necessary is authorized to be expended for the pay, transportation, and subsistence of officers and enlisted men of the National Guard Reserve as may be authorized by the Secretary of War under the law to attend encampments, maneuvers, or other exercises of the National Guard, \$9,796,672.19.

The above amount is required for a 15-day encampment, plus 1 day travel to and 1 day returning to home station, for the strength based on 300 men for each Senator and Representative in Congress.

Pay, officers, National Guard.....	\$756, 403. 90
Pay, enlisted men, National Guard.....	3, 205, 085. 69
Subsistence, enlisted men, encampments.....	2, 038, 882. 60
Transportation, officers and enlisted men, encampments.....	1, 796, 300. 00
Outdoor target practice: Pay, transportation, and subsistence.....	1, 550, 000. 00
National matches: Pay, transportation, and subsistence.....	200, 000. 00
Miscellaneous expenses: For camps of instruction and outdoor target practice.....	50, 000. 00
Transportation, Regular Army.....	2, 000. 00
Total.....	9, 796, 672. 19

Authorization for four battalions of Tank Corps included in above figures.

NOTE.—The items for pay show the actual amount required for the officers and enlisted men for an encampment of 15 days, plus 1 day traveling to the place of encampment and 1 day returning to home station, a total of 17 days. The item of subsistence is based on 70 cents per day for each enlisted man for 17 days. The item of transportation of officers and enlisted men of the National Guard is based on \$10 per officer and enlisted man, no information as to the actual distance to be traveled or the amount of such travel being obtainable. The item of target practice and miscellaneous expenses is merely estimated in order to cover the cost of transportation and pay of officers and enlisted men and subsistence for enlisted men for outdoor target practice, the national matches, and for miscellaneous expenses in the preparation of the camp, etc.

The item of transportation of the Regular Army in connection with the National Guard encampment is also merely estimated, being based on previous estimates submitted for this purpose.

The following is a table showing by arm of the service the amount required for the item of pay.

Pay required for National Guard, based on 300 men for each Senator and Representative in Congress, for 15-day camp service, plus 2 days travel to and from camp, total 17 days:

Arm of service.	Officers.		Enlisted men		Total amount required.
	No.	Amount.	No.	Amount.	
Infantry.....	3,622	\$376,544.08	91,519	\$1,697,810.86	\$2,074,354.94
Cavalry.....	767	75,638.97	14,890	277,411.98	353,050.95
Field Artillery.....	1,552	159,240.95	30,715	571,856.23	731,097.18
Coast Artillery.....	386	38,616.56	10,955	208,122.81	241,739.37
Engineers.....	422	43,759.16	9,013	174,037.14	217,795.30
Signal.....	178	17,981.54	3,310	68,009.78	85,991.32
Sanitary.....	221	14,619.81	3,806	90,997.95	84,617.76
Trains.....	166	17,538.75	5,312	106,727.90	124,266.65
Tank Corps ¹	128	12,466.08	1,824	36,111.04	48,577.12
Total.....	7,442	756,403.90	171,334	3,205,085.69	3,961,489.59

¹ On account of authorization for 4 battalions of Tank Corps.

Amount required for subsistence for enlisted men, based on 300 men for each Senator and Representative in Congress, for 15 days camp, plus 2 days travel, at 70 cents per man per day.

171,334 enlisted men, at 70 cents..... \$199,933.80
17

2,038,882.60

Authorization for 4 battalions of Tank Corps included in above figures.

TRANSPORTATION.

Amount required for transportation of officers and enlisted men of National Guard based on 300 men for each Senator and Representative in Congress, for 15 days encampment, allowing \$10 for each officer and enlisted man.

8,296 officers, at \$10..... \$82,960
171,334 enlisted men, at \$10..... 1,713,340

Total..... 1,796,300

On account of authorization for 4 battalions Tank Corps.

Target practice and miscellaneous expenses.

[8,168 officers and 169,510 enlisted men.]

The estimated amount of \$1,800,000 for the above purposes is based on the following:

Outdoor target practice:

Pay..... \$1,000,000
Transportation..... 500,000
Subsistence..... 50,000

National match:

Pay..... 125,000
Transportation..... 50,000
Subsistence..... 25,000

Miscellaneous expenses, connection with camps of instruction and outdoor target practice..... 50,000

Total..... 1,800,000

Subappropriation: "Expenses, selected officers and enlisted men, military service schools."

To provide for the attendance of selected officers and enlisted men of the National Guard to pursue a regular course of study at any military service school of the United States, except the United States Military Academy; or to be attached to an organization of the same arm, corps, or department to which such officers or enlisted men shall belong, for routine practical instruction at or near an Army post during a period of field training or other outdoor exercises; and such officers or enlisted men shall receive out of any National Guard allotment of funds available for the purpose the same pay, allowances, and subsistence to which officers or enlisted men of the Regular Army would be entitled for attending such school, college, or practical course of instruction under orders from proper military authority while in actual attendance at such school, college, or practical course of instruction, \$367,680.40: *Provided*, That in no case shall the pay and allowances authorized exceed those of a captain.

NOTE.—This estimate is based on 100 officers and 300 enlisted men for six months each. (See table below.)

Pay:	
120 first lieutenants, at \$166.67 per month.....	\$120,000.40
360 sergeants, at \$38 per month.....	103,680.00
Quarters:	
360 sergeants, at \$30 per month.....	55,080.00
Subsistence:	
360 sergeants, at \$1.25 per day.....	81,000.00
Transportation (300 miles each):	
120 first lieutenants, at 7 cents per mile.....	2,520.00
360 sergeants, at 5 cents per mile (3 cents for rail and 2 cents for Pullman).....	5,400.00
Total.....	367,680.40

On account of authorization for four battalions of Tank Corps.

Subappropriation: "Pay and allowances of officers, National Guard, Militia Bureau."

To provide for pay and allowances of officers of the National Guard assigned to duty in the Militia Bureau (sec. 81, act of June 3, 1916), \$12,000: *Provided*, That the officers so assigned in the Militia Bureau as assistants to the chief thereof do not exceed one colonel and one lieutenant colonel of the National Guard for a term of four years, and any such officer while so assigned shall, subject to such regulations as the President may prescribe, receive out of the funds appropriated for the support of the militia the pay and allowances of a Regular Army officer having the same rank and length of service as said National Guard officer whose prior service in the Organized militia shall be counted in ascertaining his rights under this proviso.

NOTE.—Statement showing pay and allowances for one year of officers of the National Guard on duty in the Militia Bureau:

1 colonel (10 years' service):	
Pay.....	\$4,800.00
Commutation of quarters.....	1,008.00
Heat and light.....	224.08
Total.....	\$6,032.08
1 lieutenant colonel (10 years' service):	
Pay.....	4,200.00
Commutation of quarters.....	864.00
Heat and light.....	200.45
Total.....	5,264.45
Grand total.....	11,296.53
In round figures.....	12,000.00

Subappropriation: "Pay of property and disbursing officer for the United States."

Estimated amount required for pay of salaries of the property and disbursing officers of the several States, Territory of Hawaii, and the District of Columbia, \$66,750.

The following statement shows the amount required for the property and disbursing officer in each case, the amount being based on 300 officers and enlisted men for each Senator and Representative in Congress, as provided by section 62 of the act of June 3, 1916, and based on the rates as provided in paragraph 12, Circular No. 7, Militia Bureau, 1916.

ARMY APPROPRIATION BILL, 1921.

Pay of property and disbursing officers.

[Strength based on 300 men for each Senator and Representative in Congress.]

State.	Enlisted strength.	Commissioned strength.	Total strength.	Rate of pay of property and disbursing officers.
Alabama.....	3,320	200	3,520	\$1,500
Arizona.....	1,058	45	1,103	750
Arkansas.....	2,442	103	2,545	1,250
California.....	3,951	192	4,143	1,500
Colorado.....	1,859	77	1,936	1,000
Connecticut.....	2,631	116	2,747	1,250
Delaware.....	847	26	873	750
District of Columbia.....	1,523	63	1,586	1,000
Florida.....	1,808	68	1,876	1,000
Georgia.....	4,528	201	4,729	1,750
Hawaii.....	960	33	993	750
Idaho.....	1,049	11	1,060	750
Illinois.....	8,915	496	9,411	2,500
Indiana.....	4,666	246	4,912	1,750
Iowa.....	4,462	260	4,722	1,750
Kansas.....	3,235	176	3,411	1,250
Kentucky.....	3,787	186	3,973	1,500
Louisiana.....	2,996	167	3,163	1,250
Maine.....	2,033	74	2,107	1,000
Maryland.....	2,345	111	2,456	1,000
Massachusetts.....	5,916	291	6,207	2,000
Michigan.....	4,542	234	4,776	1,750
Minnesota.....	3,703	182	3,885	1,600
Mississippi.....	3,154	140	3,294	1,250
Missouri.....	5,256	275	5,531	2,000
Montana.....	1,361	56	1,417	750
Nebraska.....	2,258	118	2,376	1,000
Nevada.....	657	32	689	750
New Hampshire.....	1,411	68	1,479	750
New Jersey.....	4,795	233	5,028	1,750
New Mexico.....	829	39	868	750
New York.....	13,785	634	14,419	3,000
North Carolina.....	3,094	155	3,249	1,250
North Dakota.....	1,416	60	1,476	750
Ohio.....	7,539	338	7,877	2,500
Oklahoma.....	3,339	158	3,497	1,250
Oregon.....	2,179	122	2,301	1,000
Pennsylvania.....	11,761	589	12,350	2,750
Rhode Island.....	1,840	72	1,912	1,000
South Carolina.....	2,755	126	2,881	1,250
South Dakota.....	1,427	59	1,486	750
Tennessee.....	3,112	156	3,268	1,250
Texas.....	7,011	394	7,395	2,000
Utah.....	1,160	57	1,217	750
Vermont.....	1,361	56	1,417	750
Virginia.....	3,491	117	3,608	1,500
Washington.....	2,138	98	2,236	1,000
West Virginia.....	2,092	84	2,176	1,000
Wisconsin.....	4,529	237	4,766	1,750
Wyoming.....	938	45	983	750
Porto Rico.....	2,224	102	2,326	1,000
Total.....	169,468	8,168	177,636	66,750

Subappropriation: "General expenses, equipment and instruction, National Guard."

For providing arms, ordnance stores, quartermaster stores, camp equipage, and all other military supplies for issue to the National Guard; for the promotion of rifle practice, including the acquisition, construction, maintenance, and equipment of shooting galleries and suitable target ranges; for the hire of horses and draft animals for the use of mounted troops, batteries, and wagons; for forage for the same; and for such other incidental expenses in connection with lawfully authorized encampments, maneuvers, and field instruction as the Secretary of War may deem necessary; and for such other expenses pertaining to the National Guard as are now or may hereafter be authorized by law, \$1,115,000.

The above amount is considered necessary for the following purposes:

To furnish blank forms and publications and armory equipment, and replacing arms, uniforms, equipment, equipage, etc., worn out in service.....	\$200,000
For travel expenses of the property and disbursing officers.....	10,000
For rental of target ranges.....	75,000
For purchase of target ranges.....	75,000
For construction, development, and improvement on target ranges.....	100,000
For transportation of supplies shipped within States.....	30,000
For travel expenses of surveying officers.....	17,500
For hire of draft animals and forage for same.....	250,000
For shooting galleries.....	30,000
For markers and scorers.....	125,000
For caretakers on rifle ranges.....	50,000
For prizes and entrance fees.....	15,000
For incidental expenses.....	50,000
For printing.....	37,500
Unallotted (miscellaneous purposes).....	50,000
Total.....	1,115,000
For maintenance and repair of motor equipment, and tanks, including fuel and oil ¹	500,000

Total..... 1,615,000
Subappropriation: "Travel of Federal officers and noncommissioned officers making inspections."

Estimated amount required for travel of Federal officers and noncommissioned officers for carrying out the provisions of Section 93 of the act of June 3, 1916, \$50,000.

It is estimated that in order to carry out the provisions of section 93 of the act referred to above, during the fiscal year 1921, based on the strength of 300 men for each Senator and Representative in Congress, at least \$50,000 will be required.

Subappropriation: "Travel of Federal officers and noncommissioned officers changing stations."

Estimated amount required for travel of Federal officers and noncommissioned officers changing stations, in accordance with the provisions of section 67 of the act of June 3, 1916, \$10,000.

Subappropriation: "Travel of Federal officers and noncommissioned officers on visits of instruction."

Estimated amount required for travel of Federal officers and noncommissioned officers on visits of instruction, in accordance with the provisions of section 67 of the act of June 3, 1916, is \$50,000.

Subappropriation: "Travel of Federal officers and noncommissioned officers, connection with camps of instruction."

The estimated amount required under this subappropriation is \$75,525. Of this amount \$15,000 is estimated to be required for travel to and from the encampment. The balance, \$60,525, is estimated to be required for the period covered by the encampment (15 days) at \$5 per day (provided by Bulletin No. 36, War Department, 1917), for one inspector-instructor and three sergeant-instructors for each regiment or separate battalion of infantry, cavalry, field artillery, engineers, signal, sanitary, and trains.

¹ Additional item added at hearing.

and one inspector-instructor and one sergeant-instructor for each coast defense State for each four companies. (See table below.)

Arm of service.	Regiments.	Battalions.	Companies.	Inspector-instructors.	Sergeant-instructors.
Infantry.....	62	14	.....	76	228
Cavalry.....	5	27	.....	82	96
Field Artillery.....	28	15	.....	43	129
Signal.....	.....	8	.....	8	24
Engineers.....	6	12	.....	18	54
Sanitary.....	.....	.....	63	16	48
Total.....	.....	.....	.....	193	579
Coast Artillery:					
New York.....	.....	.....	18	5	4
Maine.....	.....	.....	6	1	1
Massachusetts.....	.....	.....	8	2	2
Rhode Island.....	.....	.....	8	2	2
Connecticut.....	.....	.....	6	1	1
Delaware.....	.....	.....	4	1	1
Virginia.....	.....	.....	4	1	1
Florida.....	.....	.....	4	1	1
Washington.....	.....	.....	4	1	1
Oregon.....	.....	.....	4	1	1
California.....	.....	.....	8	2	2
Total.....	.....	.....	74	18	17

211 inspector-instructors, at \$5 per day for 15 days..... \$15,825
 596 sergeant-instructors, at \$5 per day for 15 days..... 44,700

Grand total..... 60,525

Subappropriation: "Inspection of target ranges, etc."

Estimated amount required for travel of Federal officers and noncommissioned officers in connection with inspections of target ranges, \$2,250.

Subappropriation: "Inspection of material, Field Artillery, Coast Artillery, Signal Corps, and Tank Corps."

Estimated amount required for the expenses of officers and noncommissioned officers in connection with inspection of material pertaining to Field Artillery, Coast Artillery, and Signal Corps, \$3,750.

Subappropriation: "Transportation of supplies."

Estimated amount required for the transportation of supplies, including transportation of animals issued for the use of cavalry, field artillery, signal companies, engineer companies, ambulance companies, and other mounted units of the National Guard, in accordance with section 67 of the act of June 3, 1916, \$300,000.

Subappropriation: "Expenses, sergeant-instructors."

Estimated amount required for expenses of sergeant-instructors, in accordance with section 67 of the act of June 3, 1916, \$175,000.

Additional amount added at hearing.

Subappropriation: "Office rent, inspector-instructors."

Estimated amount required for office rent and necessary office expenses of inspector-instructors, providing that wherever practicable inspectors will use the State armories for offices, in accordance with section 67 of the act of June 3, 1916, \$15,000.

Subappropriation: "Pay of the Army (armory drills)."

The following tables show the amounts required for armory drill pay for one year for the National Guard, based on 300 men for each Senator and Representative in Congress, and at the old and new rates of pay:

Old rate of pay.

[Act of June 3, 1916, \$15 per month for privates.]

Organization.	Officers.	Enlisted men.	Total.
Infantry.....	\$1,203,820	\$5,154,945	\$6,358,765
Cavalry.....	246,990	872,142	1,119,132
Field Artillery.....	506,680	1,744,740	2,250,420
Coast Artillery.....	126,350	618,306	744,656
Engineers.....	143,240	559,512	702,752
Signal.....	55,720	231,354	287,074
Sanitary.....	110,500	238,925	349,425
Trains.....	55,700	322,762	378,462
Tank Corps ¹	37,760	120,132	157,892
Total.....	2,487,760	9,862,828	12,350,588

¹ On account of authorization for four battalions of Tank Corps.*New rate of pay.*

[Pay for Army, but not for National Guard, \$30 per month for privates.]

Organization.	Officers.	Enlisted men.	Total.
Infantry.....	\$1,203,820	\$8,968,336	\$10,192,206
Cavalry.....	246,990	1,479,240	1,726,230
Field Artillery.....	506,680	3,027,310	3,532,990
Coast Artillery.....	126,350	1,075,431	1,203,781
Engineers.....	143,240	921,609	1,064,849
Signal.....	55,720	359,124	414,844
Sanitary.....	110,500	369,528	480,028
Trains.....	55,700	542,913	598,613
Tank Corps ¹	37,760	191,184	228,944
Total.....	2,487,760	16,964,725	19,442,485

¹ On account of authorization for four battalions of Tank Corps.

APPROPRIATION: "ARMS, UNIFORMS, EQUIPMENT, ETC., FOR FIELD SERVICE, NATIONAL GUARD, 1921."

Appropriation: "Arms, uniforms, equipment, etc., for Field Service, National Guard, 1921."

To procure by purchase or manufacture and issue from time to time to the National Guard upon requisition of the governors of the several States and Territories, or the commanding general, National Guard of the District of Columbia, such number of the United States service arms with all accessories, Field Artillery and Coast Artillery material, Engineer, Signal, and Sanitary material, accouterments, field uniforms, clothing, equipage, publications, and military stores of all kinds, including public animals, and a reserve supply of such arms, material, accouterments, field uniforms, clothing, equipage, and military stores of all kinds, as are necessary to arm, uniform, and equip for field service the National Guard of the several States, Territories, and the District of Columbia, \$40,000,000.

The above amount will be necessary for the issuing of new equipment for the additional National Guard to be organized during the fiscal year 1921 based on the difference between the 200 and 300 representation in Congress, and for replacing equipment previously issued to the National Guard organized during the fiscal year 1920, based on 200 representation, the equipment for which was made as a free issue under the provisions of the act of July 11, 1919.

APPROPRIATION: "FIELD ARTILLERY MATERIAL, NATIONAL GUARD, 1921."

Appropriation: "Field Artillery material, National Guard, 1921."

For the purpose of manufacturing and procuring Field Artillery material for the National Guard, \$9,000,000.

The following are the Field Artillery organizations for the National Guard, based on 300 men per Senator and Representative in Congress:

	Batteries.
28 regiments.....	168
15 battalions.....	45
4 batteries.....	4
Total.....	217

Although 149 batteries of the above 217 were authorized to be organized during the fiscal year 1920, it is thought that not more than 117 will be organized during the year. The estimated cost of a battery of Field Artillery is \$90,000. The amount necessary for the fiscal year 1921 will be, therefore, 100 batteries times \$90,000, or \$9,000,000.

The CHAIRMAN. I will say to you, as I have said to the other officers who have appeared before us, it is the desire of the committee to complete these hearings during the coming week. I hope to get them through by Wednesday or Thursday and we will supply you with the transcripts the moment they come into my hands, and we will ask that you kindly send them back within 24 hours, so that they can be printed without delay.

Lieut. Col. WILSON. That will be done, Mr. Chairman.

DAMAGE TO AND LOSS OF PRIVATE PROPERTY.

Gen. LORD. May I dispose of one item before you adjourn?

The CHAIRMAN. Certainly.

Gen. LORD. Page 41: Claims for damages to and loss of private property. We have been getting \$40,000 for that. The estimate submitted was \$110,000. I have had someone go into the auditor's office where those claims are settled, and nobody can foretell very much what those claims will amount to, and we have reduced that \$110,000 to \$40,000.

The CHAIRMAN. The same amount as last year?

Gen. LORD. The same amount, because it is a guess anyhow, and if in December next we need any more money we can call for it.

The CHAIRMAN. Yes.

Gen. LORD. We expect to have Ordnance Monday morning?

The CHAIRMAN. Monday morning, yes; and Monday afternoon will it be possible to have the Quartermaster General?

Gen. LORD. Or the Signal Corps. I will give the Quartermaster General all the time possible, because this is a hurry-up call and it is pretty difficult to give much of an estimate in this time.

The CHAIRMAN. And this on page 41, the Walter Reed medical center, of course Col. Wolf forgot to take that up.

Gen. LORD. Gen. Marshall appears for that.

The CHAIRMAN. All right.

TANK CORPS.

Gen. LORD. Mr. Chairman, Gen. Rockenbach is here from Camp Meade, and will be obliged to return this afternoon, if possible. He has two short items, on page 60, if you will allow him to make his statement.

The CHAIRMAN. We will be glad to hear you, General.

Gen. LORD. Gen. Rockenbach is the head of the Tank Corps' activity.

The CHAIRMAN. We will be very glad to hear from you, General.

STATEMENT OF COL. S. D. ROCKENBACH, CHIEF, TANK CORPS.

Col. ROCKENBACH. Well, I have submitted this estimate, and itemized it there, and explained the purpose, and I will describe what we are carrying on, if you deem that necessary. With this amount, \$79,000, we are carrying on five offices, one of which, the adjutant's office, still has a record of 15,000 men. In addition to the brief data that is in The Adjutant General's Office, we handle something like 300 applications, or 10 letters a month, from parents, etc. Then the next office is what we call the equipment office, which carries on our equipment business and keeps in intimate touch with the Ordnance Department, the Signal Corps, and other supply departments, telling them what we want.

I might say, to give you a little idea of their work, that some six months ago we were using a trailer to carry the small tank with. Now, as the result of the work of that department we replaced that trailer by two very heavy springs on a 5-ton truck. The spring cost us \$10, and the trailers were costing us an average of \$500.

In addition, the guns on the machines have all been revolutionized.

Then the second office, the Intelligence Office, keeps in touch with all foreign improvements, through our intelligence department of the War Department, tries to keep up to date, and keeps the map room going producing maps for any probably country that we might want to use tanks on.

The fourth of those headquarters offices is the one that is connected distinctly with training. We are so very small that when we came back, of course, we lost practically all of our men. The Tank Corps had originally something like a tenth of 1 per cent which had come from the Regular Army. The men had been improved by training with the gas engine and tractor to such an extent that we lost pretty nearly all of those men. I think I lost nearly 350.

The CHAIRMAN. What do you mean by that?

Col. ROCKENBACH. I mean we are absolutely new now.

The CHAIRMAN. Did those men get discharged from the Army, and then find more remunerative employment in private concerns?

Col. ROCKENBACH. They got out, and we never had a case where a man did not double his pay. In fact, one of the men the other day brought me over a letter from a commercial firm which said that it did not care what his pay was in the Army; it would give him three times as much. As a result of that, we have got to get a good deal of assistance. I have just made provision, and to-morrow will send two organizations of 300 men to Camp Benning. The First Division has asked me for two companies. Well, I have attempted to supply each division with a battalion of tanks per month. Sending these men out as soon as they get trained, leaves my training force in the school practically all gone.

The CHAIRMAN. About how many men do you contemplate training in the next fiscal year?

Col. ROCKENBACH. A thousand. We will have to run through a thousand in order to meet the demands of the organized divisions. Shall I read the items that I put in there?

The CHAIRMAN. If you kindly will.

Col. ROCKENBACH. One chief clerk, at \$1,800 per year. I might say that that clerk is not only at the headquarters of the Tank Corps,

but he is chief clerk of the school. There are eight clerks for the four offices that I mentioned, in connection with the four senior instructors in the school.

The CHAIRMAN. Before you go further, I think you know that this committee does not furnish clerks, messengers, etc., for any of the organizations of the Army other than the General Staff Corps. The Committee on Appropriations makes allowances for clerical forces in the other departments.

Gen. LORD. May I just elaborate that a little?

The CHAIRMAN. Yes.

Gen. LORD. The appropriation committee provides only for the clerical force in the executive department in Washington. The clerical force outside of the executive departments in Washington for the Army is carried in the Army appropriation act, this act.

The CHAIRMAN. Yes; those are the clerks that are provided for the various organizations away from Washington.

Gen. LORD. Away from here. Each has a specific appropriation—Ordnance, Quartermaster, and so on. Your headquarters, Gen. Rockenbach, are at Camp Meade?

Col. ROCKENBACH. My headquarters are at Camp Meade, under direct control of the War Department, and the special service school, which comes under the Chief of the Tank Corps, is also controlled from Washington.

With the stenographers, typists, and messenger, it amounts to a total of \$32,700.

Twenty-five mechanics at \$1,620 each per year. I will say that a tank requires 200 hours, or practically one month a year of repairing, and in shipping men out making examinations it leaves us absolutely stripped here of mechanics. I hope eventually to get rid of all civilian mechanics, but I can not do it in the next year.

Four checkers, who are engaged on the care of the property.

That makes a total of \$45,000, and a grand total of \$79,000.

The Military Establishment, miscellaneous—incidental expenses, Tank Corps schools, is \$5,000, which we have just started, and which we have made a very low estimate on. We need very badly a civilian instructor on the gas engine. The instructors I have had on the gas engine we have to change once a month. He belongs to an organization. In other words, I have developed my school training force by bringing in captains and lieutenants from the companies, and they are going to leave us, and I have got to make some change so that I can have an expert on the gas engine who is permanent.

The next item is for purchase of special apparatus and materials for instruction of enlisted specialists (bench and lathe hands, radio experts, oxy-acetylene welders, photographers, gas-engine mechanics, electricians, etc.), \$500.

For purchase of special instruments and employment of temporary technical services in department of tank engineering, \$1,500.

For purchase and of finding of professional books, treating on military and technical subjects, for use of students and for the Tank Corps school library, \$500.

For purchase of unforeseen small items and the small expenses in connection with proper operation of the Tank Corps schools, \$500, making a total of the \$79,000 above stated.

Now, I would like to say there that while I do not attempt but one thing at a time, up to the present time, I think for the next year I will be fully occupied in attempting to get the nucleus of a Tank Corps which you may make a start with in time of war. At the same time, the result of this is absolutely vocational. An inspector came up and reported that there was not a man there who was getting as good vocational training as could be given anywhere. We lose these men very rapidly. As you gentlemen know, a great many of them appeal to you as having dependent relatives. When we have given a man more than six months training, if he is very bright, he will develop dependent relatives, and we will lose him. For instance, I have two expert radio operators. There is a great demand in the United States for radio operators. Neither one of them has been in but six months, and now both of them have developed dependent relatives. I will get a letter from you or the War Department, and so I will lose my radiator operators.

The CHAIRMAN. They probably have been offered a very much larger salary than they could possibly earn while they are in the Army.

Col. ROCKENBACH. One of them we recently made a sergeant. They are on a private and sergeant's pay.

Understanding the situation, we cut that down to the minimum on which we can operate the school, which proposes to turn out a thousand men in the next year. I do not mean they will be professors, or anything of that kind, but they will be efficient men for the Tank Corps, and they will also be men who have doubled their wage-earning capacity.

I have frequently asked, as Mr. Kahn knows, that the committee go out and take a look at us. We are absolutely a mechanical department, simply running engines.

The CHAIRMAN. We will try to get out there before long, General.

Col. ROCKENBACH. I would like very much to have you there. It is hard to visualize this in the short description I can give you

I would like to insert this data in the record.

(The matter referred to is as follows:)

Supporting data for following items entering into estimate of appropriations pertaining to Army bill, fiscal year 1921.

(a) Military Establishment, Miscellaneous—Tank Service.....	\$79, 000
Salaries:	
1 chief clerk, \$1,800 per annum.....	1, 800
8 clerks, class 2, \$1,400 each per annum.....	11, 200
9 stenographers, \$1,500 each per annum.....	13, 500
5 typists, \$1,296 each per annum.....	6, 480
1 messenger, \$720 per annum.....	720
Total.....	33, 700
Wages:	
25 mechanics, \$1,620 each per annum.....	40, 500
4 checkers, \$1,200 each per annum.....	4, 800
Total.....	45, 300
Grand total.....	79, 000

The above amount is necessary for payment of civilian employees to assist in handling clerical work in the office of the Chief of Tank Corps, the various Tank Corps

organization headquarters, and Tank Corps schools, and for the payment of the necessary mechanics to assist in repairing and preserving tanks in the hands of Tank Corps units.

(b) Military Establishment, miscellaneous, incidental expenses, Tank Corps schools.....	\$5,000
Services of expert civilian instructor on gas engines.....	2,000
For purchase of special apparatus and materials for instruction of enlisted specialists (bench and lathe hands, radio experts, oxyacetylene welders, photographers, gas engine mechanics, electricians, etc.).....	500
For purchase of special instruments and employment of temporary technical services in Department of Tank Engineering.....	1,500
For purchase and binding of professional books treating on military and technical subjects, for use of students and for Tank Corps school library.....	500
For purchase of unforeseen small items, and the small expenses in connection with proper operation of the Tank Corps schools.....	500
Total.....	5,000

The above amount covers the incidental expenses in connection with the operation of the Tank Corps schools, for specialized training of the commissioned and enlisted personnel.

In view of the fact that the Tank Corps schools are undergoing organization, and the various lines of work are not yet definitely settled in many respects, it is impossible to give more definite details as to the purposes for which the \$5,000 is needed.

NOTE.—The above mentioned estimates appear on page 389, Document 411, House of Representatives, "Letter from the Secretary of the Treasury, transmitting estimates of appropriations required for the service of the fiscal year ending June 30, 1921," under the heading, "Military Establishment, Miscellaneous."

Mr. McKENZIE. General, did the use of tanks in the war with Germany demonstrate that they are really a military arm of some value?

Col. ROCKENBACH. I think on the 5th day of November the Prussian Minister of War in the Reichstag stated that Germany was greatly superior to any of the allies in armament equipment, except tanks, and that the recent disasters had been shown to be attributable to tanks, and that he would supply that deficiency in the German army in a short time.

On the 28th of August, 1918, Ludendorf, as quoted from his own book, directed the retreat of the whole German army to land in front of which there were canals, so that they would have protection from the tanks.

On the 26th of September our infantry was held up both at Cheppy and Montfaucon. The orders for tanks did not require them to fight until the 27th. The infantry had not gone far until we pushed ahead into the fight, and the tank brigade commander got a distinguished service cross for taking Bois de Cuisy, and although they were short of men, they lead the attack on Cheppy.

Mr. McKENZIE. There is a difference of opinion among military men as to their value, is there not, General?

Col. ROCKENBACH. I do not think there is an officer in the United States Army that had any experience, that does not believe in tanks. The whole question is as to the organization and the location of the tanks.

Mr. McKENZIE. I had a conversation some time ago with one of our officers, who got shot to pieces, that is pretty well shot to pieces, in one of the tanks over there, and he was rather discrediting the value of the tank as an arm, and the reasons he gave were about as follows, that, in the first place, they disclose to the enemy where your infantry is, and if you are moving forward, you can not hide them;

they are out in the open, and they become the subject of direct fire, but without them the infantry, under many circumstances, can move forward without being detected, or, at least, becoming the subject of direct fire from the enemy's artillery. That was about the way he put it.

Col. ROCKENBACH. I think the two illustrations I have given you there show that the infantry got held up by the machine gun fire, and it is my belief that in the future the infantry commander who leads an attack on machine guns without tanks, if the tanks are available, is pretty apt to be tried for murder.

Another thing, we had very little training with the infantry. I have several tanks that have been hit 2,000 times by rifle bullets and shrapnel fragments, and when you consider that a tank takes that number of bullets and fragments away from the Infantry, if it did not do anything else, it would be accomplishing a valuable work.

I would also like to say that as our tanks were disabled we took up tanks in good condition at night, and shipped back the disabled ones. At Vareunes there were something like 100 tanks. Some of those tanks we found were so badly demolished that we could not repair them in the field, and I ordered them to be sent back to the shop. Gen. Pershing heard of that and sent word to me that I would not be allowed to move a single tank back on the road, because the demoralizing effect of seeing tanks moved back would be too great.

I went to Paris after the fight of the 10th of October, after that drive, and attempted to get taxicabs and put tin covers on them, the Boche were so demoralized by the tank. We ran in any camouflage machine that we could get that looked like a tank.

I have never heard any member of the General Staff, or any general officer who had been abroad, question the use of the value of the tank. It is a new service, and we do not know where is the best place for it. That has been the only question that has come up since I returned.

The CHAIRMAN. General, have you been able to learn anything about the reorganization of the armies of Europe, and how they feel toward the tank service?

Col. ROCKENBACH. I have in regard to the French and the British. The British are committed to the use of heavies and the lights. The light tank there was closely connected with the infantry, and will be placed with the infantry, that is like each division having a regiment of cavalry. There will be a battalion of 50 tanks per infantry division assigned to become an organic part of that division. The headquarters schools and the departments such as I am carrying on are directly under the General Staff. The French have the same system.

The CHAIRMAN. The Italians are also reorganizing their army. Have you anything to indicate what their attitude is?

Col. ROCKENBACH. They had no tanks during the war, and I think that they will adopt whatever system the French adopt. I would like to say on that, though, that we will within the next month revolutionize it. We have a machine in production now that will travel at the rate of 12 miles an hour across country and 20 miles on the road.

The CHAIRMAN. Do you want that to go in the hearing, or is that information that you are willing for the other countries to know?

Col. ROCKENBACH. I do not think it makes any difference now, because, as far as I can observe, the foreign countries seem to know a little more about it than we do.

The CHAIRMAN. They get the information anyhow, do they not?

Col. ROCKENBACH. Yes, sir.

The CHAIRMAN. Gen. Marshall, we are ready to proceed with your matter.

Gen. MARSHALL. Mr. Chairman, with respect to the appropriation for barracks and quarters and the construction of quarters for the General Staff College, Gen. McAndrew is present, and I would like him to present the facts to the committee with reference to that.

The CHAIRMAN. We will be very glad to hear you, Gen. McAndrew.

CONSTRUCTION, GENERAL STAFF COLLEGE.

STATEMENT OF MAJ. GEN. JAMES W. McANDREW, PRESIDENT GENERAL STAFF COLLEGE.

Gen. McANDREW. Mr. Chairman, I would like to call the attention of the committee to the fact that our experience with the General Staff College has convinced us that it is highly desirable to house as soon as possible all the officers who are on duty at the General Staff College, whether as instructors or in the student personnel. In the first place, of course, we all know how difficult it is for officers to get quarters in the city of Washington, especially within their commutation, but apart from that, I think it seriously militates against the efficiency of the General Staff College to have officers residing anywhere within the city of Washington and the suburbs of Washington.

To give an instance of that, when we started the course the first of last September, I fixed the hour of assembly of the college at 9 o'clock in the morning. I soon found that in order to get there at 9 some of the officers who were living away out at Chevy Chase or some distance out, had to leave their apartment houses, or hotels, or homes as early as half past seven, and even earlier in some instances, in order to get down there by 9 o'clock. We found out that a number of them could not get breakfast where they were living at that early hour, and they were turning up at the college without any breakfast. We then had to place the hour of assembly at half past nine. We found out that there were some officers of low rank down there, captains and majors, and, by the way, I would like to call the attention of the committee to the fact that none of our officers are holding increased rank. They were all demoted at the beginning of the course back to their regular rank. That left us officers with as low rank as captain. We found out that it was absolutely impossible in some instances for those men, especially if they had families, to get any quarters in town, so we took three old buildings within the inclosure of Washington Barracks, permanent buildings, however, and converted them into officers' quarters. In those buildings we are now housing 22 officers. Of course, that relieved the problem somewhat, but did not offer a complete solution of it.

Another point in regard to the matter of securing accommodations in the city is this, that the leasing is usually by the year. From the

1st of October to the 1st of October. Our course begins the 1st of September, and ends in June, so that an officer coming there on the 1st of September is put about before he can lease an apartment on the 1st of October, and if he does lease it on the 1st of October, he has to carry it over for a full year.

If we could have all the officers housed down at Washington Barracks, we can extend the capacity of the General Staff College to approximately 100 student officers, and I believe, on the whole, can get much better work done. We have now all told, 124 officers on duty connected with the college and the post. Of that number, however, we have only about 43 housed within Washington Barracks.

Of course, as the gentlemen of the committee may know, practically all the permanent buildings in the north end of Washington Barracks, the barracks buildings and storehouses, all such permanent buildings, have been turned over to the Adjutant General's Office for the purpose of storing and working over the draft records.

Mr. McKENZIE. Would it not be a good idea to dump those in the river and fix up some of those buildings for these officers?

Gen. McANDREW. If we could get those buildings I believe the solution would be to change a number of them into proper quarters for officers, but at the present time, of course, it is impossible to use those buildings. They are chock-a-block with draft records, every one of them.

Mr. McKENZIE. You could take a company of enlisted men down there and an Army truck and soon get them out.

Gen. McANDREW. In regard to that matter, because of the fact that the draft records now occupy practically every permanent building, we are using a number of temporary buildings that were put up during the war time, and, of course, they are of flimsy construction and ought to be gotten rid of, because they are a danger in the way of fire and will need constant repair, but we have to use them because we have two detachments of enlisted men connected with the college, one white and one colored, and also a Quartermaster Corps detachment that we must house down there. We have our services, the Quartermaster, Commissary, Engineers, and so on, and those are mostly in temporary buildings. Our clothing department, for instance, is in a temporary building. All the other buildings were converted into buildings for the working over of the draft records. That is the position now.

Mr. McKENZIE. Now, General, if we would ship those draft records back to the various States, or consign them to some building that is not of very much importance, and dismiss the 500 clerks or more that are engaged in working on those draft records, we could build quarters for all these officers down there and then be something ahead, could we not?

Gen. McANDREW. Well, possibly money might be saved in that way. I really could not say that, because all those buildings would need complete remodeling to fit them for officers' quarters. We would in any case have to retain a number of the large barracks buildings for our detachments of enlisted men.

In regard to the records, I believe the idea is just as soon as they are worked over that they will be shipped away somewhere, but whether that is going to take a year or three years I, of course, can not tell. We are hoping to get those records out of there and

return the permanent buildings to the college as soon as possible. Then, of course, we can get rid of that mass of temporary construction, which is undesirable from so many points of view.

But, getting back to the other subject, I think it is highly desirable that we plan to eventually put all the officers who are on duty at the General Staff College in quarters down at Washington Barracks.

Mr. GREENE. Besides the economic demand, is there not a positive school benefit to be had by having these men, as it were, in the garrison, where they are susceptible to quick call for assembly for some school purpose?

Gen. McANDREW. Decidedly so, Mr. Greene, and also the fact that all of them can associate together and talk over their work together, which is the biggest help in the world, just the same as it is in any other university or college, and the same as it is at West Point. At Leavenworth we house everybody right in the post, all the officers who are there, both of the School of the Line and the General Staff School. I consider it of the highest value to have the officers all together there.

Mr. GREENE. And to keep in the school atmosphere constantly?

Gen. McANDREW. All the time. Then, too, you know that where an officer has the problem of the outside care of his family to contend with, where he has the problem of housing it before him continually, where he may not know where he can get a house, or whether his family will be out of quarters, all that has a detrimental effect on his efficiency as a student officer. I can say that we are exacting from them the very highest class of work down there.

Mr. McKENZIE. Of course, General, you intend to make that one of the requirements, that a student officer shall be compelled to live in these quarters?

Gen. McANDREW. Yes, sir.

Mr. McKENZIE. Otherwise we might get in the difficulty of some of them not wanting to live down there. That is not the most desirable location, is it, for dwellings?

Gen. McANDREW. When you get right inside of the barracks, it is. I think it is highly desirable; I think one of the most desirable in the city of Washington, as a matter of fact. Of course in order to get to Washington Barracks you have to go through a very undesirable part of Washington, but once inside of the barrack wall we have a very pleasant place, where anybody would want to live. We could make and would make that requirement, that every officer ordered to duty at the General Staff College would have to live down at Washington Barracks, and then when quarters were vacant at any time officers on duty right here in Washington, instead of taking their commutation, might get quarters down there.

Mr. McKENZIE. Well, it is true that the average Army officer is dependent upon his pay as an officer, but you do have some officers who, fortunately for them, are well to do financially, and they can live in any part of the city they may desire, but it would be a very disturbing thing, it seems to me, if they were permitted to do so.

Gen. McANDREW. We would not permit them. We would not give them the option to live outside or down there, if we had the quarters. We would make them live there. Of course, this year when quarters were converted for the use of officers, we found no

difficulty whatever in getting people to take them. In fact, it was just the other way. We did not allow them to go according to rank, however. We gave them to officers who on account of their low rank received the least in the way of commutation. These officers who were married, some of them with two or three children, really needed a place to live. Those were the officers whom we put into buildings that were converted. Of course, in some of those buildings we were not able to put messing facilities, which made it a little inconvenient. We have a mess in the officers' club, and we take care of them in that way, but it makes it a little more expensive than it would if we had a building where they could have their own mess.

The CHAIRMAN. We will adjourn until half past 10 Monday morning.

(Whereupon, at 5 o'clock p. m., the committee adjourned until 10.30 o'clock a. m., Mar. 29, 1920.)

SUBCOMMITTEE OF THE COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Monday, March 29, 1920.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. General, I presume the first matter you want to take up this morning will be the item concerning the construction and repair of hospitals.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. That item is on page 38 of the tentative draft of the bill. We will be glad to hear what you have to say upon the subject.

Gen. MARSHALL. Mr. Chairman, as I stated to you a while ago, I asked Gen. Ireland to come before the committee this morning and give you a statement with respect to the hospitals, before I proceed with the details of the estimates for the Construction Division. Gen. Ireland will make a statement to the committee in regard to the Walter Reed General Hospital and also in regard to the Letterman General Hospital at San Francisco.

The CHAIRMAN. Gen. Ireland, we will be glad to hear you.

MEDICAL DEPARTMENT CONSTRUCTION.

STATEMENT OF MAJ. GEN. M. W. IRELAND, SURGEON GENERAL.

Gen. IRELAND. Mr. Chairman, Gen. Marshall has asked me to make a statement this morning with reference to the Letterman General Hospital at San Francisco and the new construction at the Walter Reed General Hospital, and I will speak to you first about the Letterman General Hospital.

The Letterman General Hospital, situated at the Presidio in San Francisco, was constructed as a result of the Spanish-American War when we sent troops to Honolulu and to the Philippines. It is a general hospital built on the pavilion plan, and is constructed of red wood. The construction of red wood has probably saved the building from destruction by fire on several occasions. Those buildings are now getting old, and it has been the policy of the Surgeon General's

office for several years to replace these temporary buildings, which are now more than 20 years old, with concrete structures, and they placed these concrete buildings, which have been allowed from time to time, so as to obstruct any fire that might start in the other buildings, and all new construction out there is made of concrete.

There is an item in the bill this year for \$94,900 which we wish to use in constructing two wards; that is, we are going to replace two of the frame buildings there with concrete structures. This is made necessary by the age of the present buildings and by the desire to protect the other buildings from fire. It is the ultimate desire of the Surgeon General's Office to have the entire hospital out there constructed of concrete for the protection of the patients.

The CHAIRMAN. How many patients have you there now? I think Col. Wolfe told the committee the other day that you have something like 700 out there.

Gen. IRELAND. The last report we have from the Letterman Hospital shows 928. We have averaged between 1,200 and 2,000 patients at the Letterman Hospital, and we think we are going to have an average of between 700 and 900 patients at this hospital from now on. We are getting down to the peace-time allotment for this hospital. But, Mr. Chairman, you will understand that the Letterman General Hospital is the principal hospital on the Pacific coast, where all of the difficult and obscure cases in the western part of the country are sent for final definitive treatment. That is where we send all of our difficult surgical cases and our psychiatric cases, and all of the obscure cases for final observation and treatment. It is the hospital in the West where the officers are sent for observation and treatment almost always for any temporary disability or for observation and treatment before they are sent before the retiring boards for final action.

The CHAIRMAN. I understand patients are sent to the Letterman Hospital from the Philippine Islands and from Hawaii.

Gen. IRELAND. That has been our base hospital for the Philippines and Hawaiian Islands ever since we went over there in 1898.

The CHAIRMAN. As I understand it, the general construction of that hospital was started in 1898?

Gen. IRELAND. Yes, sir.

The CHAIRMAN. And many of the buildings were thrown up rather hurriedly?

Gen. IRELAND. Very, very hurriedly, and it has been a task to keep these frame buildings, that were put up more than 20 years ago, in operation to-day. This hospital, as I said, was built on the pavilion plan and joined by corridors, and the danger from fire in a structure of that kind is very great, and the danger from fire in any hospital is a greater item than in any other building I know anything about; that is, you have so many helpless patients, so that when a fire starts in at a place like that it is almost impossible to get through it without a calamity.

The CHAIRMAN. In similar frame buildings, as I now recall, one-story buildings, three or four persons were burned to death on those grounds some years ago?

Gen. IRELAND. Yes; and here in the East, at Colonia, we had a similar accident in the fall of 1918, and incidentally, that occurred

among people who were not patients at the hospital. A medical officer was burned to death.

The CHAIRMAN. I know a sergeant and his wife were burned to death one morning in one of those frame buildings at the Presidio. The fire started in one of the frame buildings, and before the sergeant and his wife could get out they were burned. Of course, Mrs. Pershing and her children were burned to death also in one of the buildings at the Presidio.

Gen. IRELAND. That was in the commanding officer's house.

The CHAIRMAN. That was near the hospital.

Gen. IRELAND. Yes; just within a stone's throw.

The CHAIRMAN. And that was a frame building, also?

Gen. IRELAND. Yes, sir.

Mr. FIELDS. If there is any one class of buildings more than any other, that should be fireproof, it is a hospital.

The CHAIRMAN. They had to build these hospital buildings very rapidly during the Spanish-American War?

Gen. IRELAND. Yes, sir.

Mr. GREENE. What is a fireproof building?

Gen. IRELAND. I am not a builder, so I could not give you technical or expert testimony on that, but it is a building that will withstand fire, or is slow burning.

Mr. GREENE. Have they ever found such a building, that could withstand fire and was at the same time habitable, not simply made of iron and devoid of all warmth or household comforts?

Gen. IRELAND. I will have to ask the chief of the Construction Service to answer that question, Mr. Greene. I am not a constructor. I do know, however, that we feel very safe even in our reinforced concrete buildings, or brick buildings; that is, comparatively safe.

Mr. GREENE. I understand. I am not trying to make the records show an absurdity; we all constantly hope to have something that is fireproof, and we also want it to be habitable, and I doubt if it has been found very successful yet among successful builders. Our problem is to determine whether we want to exchange reasonable assurance for a still less convenient building.

Gen. IRELAND. The construction of just a frame structure like the Presidio is not a reasonable assurance. I think that is a fair statement.

Mr. GREENE. I am not disputing it.

Gen. IRELAND. I think that is a fair statement, and the way in which, during the emergency, we have built hospitals, which have grown up overnight during the war, is not a reasonable assurance against fire, and the fact that we have not had a calamity, I think, is almost providential.

We had the same thing on the border in 1916, where we were told to get ready overnight for the 150,000 men who went on the border, and these mushroom buildings went up, and I do not think we have lost a single one by fire. I had command of the hospital at San Antonio, where the buildings were built of pine, and there was a space of 45 feet between the wards. I know I spent many restless nights, and every time the fire alarm sounded I was afraid to look over toward the hospital, because it would have been practically impossible to have gotten those helpless patients out of there if a fire had started.

The CHAIRMAN. I suppose in such a building constructed of concrete and metal, the only thing in the building that would be subject to fire would be the wooden furniture and the wooden material, generally, in the rooms?

Gen. IRELAND. Yes.

Mr. GREENE. This has been developed, and one does not have to be a contractor to know it, that the fire has come, in a great many instances, from the rapid combustion of paints and oils which were attached to a fireproof structure. As a striking illustration of that I might cite the Iroquois, which was supposed to be the last word in fireproof building at that time, and which was designed in that way because they thought a theatre was notoriously likely to be subject to fire risk. At the very day it opened, several thousand people lost their lives by fire. So a fire is not to be controlled by the foundation, or by the inner structure of the building, necessarily.

Gen. IRELAND. That is very true. The request for the appropriation for the Letterman Hospital is for the purpose of replacing two of the frame wards which have grown old and which should be replaced, and for the additional protection it will give.

The CHAIRMAN. The Letterman General Hospital is one of the largest hospitals you have?

Gen. IRELAND. It is one of the two very large hospitals we have of a permanent structure. The other items relate to the Walter Reed General Hospital.

Mr. MCKENZIE. Before you leave the item for the Letterman Hospital, General, do you think it is imperative that we spend \$33,709 this year to put up a carpenter shop out there? Could we not get along with the old carpenter shop?

Gen. IRELAND. The old carpenter shop—

Gen. MARSHALL (interposing). That item has been eliminated.

Gen. IRELAND. We are confining ourselves entirely to the two wards.

Mr. MCKENZIE. I was looking at the item at the bottom of page 39:

Letterman, General Hospital, San Francisco, Calif., carpenter and plumbing repair shop, \$33,709.

Gen. MARSHALL. That has been eliminated.

Gen. IRELAND. We are asking for the construction of wards only out there.

The CHAIRMAN. Will you tell us about the items at the top of page 40 for the Walter Reed General Hospital, the first item being for five 30-bed wards, one administration building, and one mess-hall building, \$398,275; and the second item for two additions to the main building, for which you are asking \$1,497,800.

Gen. IRELAND. The Walter Reed Hospital was authorized by appropriations about 1906, and since that time we have been trying to establish a complete general hospital there, to carry out the same functions that the Letterman General Hospital carries out on the Pacific Coast. We have only partially succeeded, but we have a fairly good plant out there, which, in permanent building, can take care of 164 patients. Of course, during the war we had a lot of mushroom construction put up there so that we can take care of, in temporary buildings, something like 1,800 patients. We have more than 1,000 patients there to-day, and we think that the average

number of patients at the Walter Reed Hospital will be somewhere between 600 and 800, in time of peace.

The construction at Walter Reed Hospital is divided into three phases in this bill, the construction of a psychiatric service, additions to the present buildings, to provide for medical and surgical service, and the construction, or the beginning of the construction of the Army Medical School.

The war has given us a new idea in regard to the care of our nervous and mental cases, and I think it is fair to say that the Army has set a new standard in the care of these patients during this war. It is something that has been looked upon with a great deal of favor by people from civil life, the way in which the unfortunate man with mental derangement has been cared for by the Army. It will be impossible for us ever to go back to the custodial care of the insane man. We must take this man and treat him in the modern way and give him a chance to recover and go back into civil life, as thousands of such men have been given a chance during this war, and it is for that reason we have an item in here to build a psychiatric service out there.

We have at Walter Reed Hospital to-day a service which is not surpassed and probably is not equaled in the United States, and we have stationed there one of the very best men in the United States to care for these patients. They are in temporary buildings, constructed during the war and wholly unsuitable for this work. The request for this appropriation is to contract buildings for that service, so that we can give modern treatment to the unfortunate men with mental derangement that we acquire in the Army, and they come to us in great numbers.

As you know, Mr. Chairman, the Secretary of War has approved the plan to develop a medical center at Walter Reed Hospital, and Congress has given us the necessary money to purchase additional land. The construction of this psychiatric service is simply a part of the development of this hospital at Walter Reed.

The CHAIRMAN. You spoke of the fact that the Letterman Hospital was the place where you treat officers and men from a very large area extending as far west as the Philippines and as far away as China?

Gen. IRELAND. Yes, sir.

The CHAIRMAN. What centers contribute to the number of patients treated at Walter Reed Hospital?

Gen. IRELAND. All of the eastern part of the United States.

The CHAIRMAN. Extending from where to where?

Gen. IRELAND. Extending from Maine to Chicago, and as far south as Atlanta or New Orleans. All of those cases are brought to Walter Reed Hospital for definitive treatment, and this is the policy we have followed for a great many years.

The CHAIRMAN. I understand the cases you are especially bringing to Walter Reed Hospital for treatment are psychiatric cases.

Gen. IRELAND. That is one class of patients we bring there. We take a similar class of cases from the Philippines and from the western section of the United States to the Letterman General Hospital, and they have had a specially constructed concrete building for the care of these patients at the Letterman General Hospital for 10 years. It was there in 1912 when I spent three months in that hospital. It

is a specially constructed concrete building. We wish to build a similar building for the same sort of service here, and these buildings are a part of the development of the Walter Reed Hospital center.

The other item is for the extension of the present administration building, which is to give a medical service at one end of the building and a surgical service at the other end of the building, and is simply a part of the scheme of building a complete general hospital on the Walter Reed grounds.

We started out there simply with an administration building, with a certain amount of space for general cases. We have added from time to time to this building as appropriations became available until at the present time we can take care of 164 patients, and we want to make this addition now so that we can have a modern medical and surgical service, where we can take care of the special surgical and medical cases coming there. With the money available, which we asked for, additions can be built which would allow us to take care, in permanent buildings, of 486 patients.

The CHAIRMAN. To go back for a moment to the previous item, I see you desire to put up five 30-bed wards?

Mr. IRELAND. Yes, sir. That is for the physiatric service.

The CHAIRMAN. What do you estimate to be the cost of each of those buildings?

Gen. IRELAND. It is estimated that they will cost about \$398,000 altogether. In the case of a hospital, to a very considerable extent, the cost of a bed depends on the size of the hospital. Of course, if we just build an administration building with one small ward, the expense of the beds for that particular hospital would be tremendous.

The CHAIRMAN. Generally speaking, in hospital construction, do you not figure on so much per bed, when you figure out the cost?

Gen. IRELAND. Yes; something like \$2,500 or \$3,000 a bed. Up here at some aviation camp they constructed a hospital with six beds, I believe, and the cost per bed is something tremendous, of course, in a case of that kind. If they were to extend that to 50 beds the cost per bed would drop at a great rate.

Mr. GREENE. What is the idea of taking the bed for your figuring point? Perhaps it is simply because the hospital is designed to have that in it.

Gen. IRELAND. We always speak of a hospital of 50 or 75 or 100 beds. It is a convenient way of speaking of the cost. Of course a complete hospital must have certain accessories.

Mr. GREENE. Certainly; we all appreciate that fact. I am just asking out of curiosity, because we frequently find in estimates some basis of percentage of cost that is most illogical, because you can not make comparisons; it is not even a military ratio or a professional ratio.

Gen. IRELAND. I recognize that fact.

Gen. MARSHALL. If you ask a hotel man about the cost of construction of a hotel he will say it costs so much a room.

The CHAIRMAN. I imagine that figuring the cost of hospitals at so much per bed, especially in the case of private hospitals, allows certain well-disposed individuals to endow a certain number of beds.

They know, if the hospital costs so much per bed, just how much money they can endow a bed for.

Gen. IRELAND. That is one of the phases. Anyone who is not a physician, who speaks to you about a hospital in the city will, as his very first question, ask how many beds it has.

Mr. FIELDS. The bed capacity is the chief objective.

Gen. IRELAND. Yes, sir.

Mr. GREENE. I have in mind some institutions where the mere bed capacity is by no means the real purpose of the institution, but where certain parts of the overhead and the attendant treatment are far more expensive and more generally employed and cost a great deal more money than the mere sleeping accommodations of that institution.

Mr. FIELDS. After all, the patient must have a bed, and so the number of patients which the hospital will accommodate is determined by the number of beds.

The CHAIRMAN. I notice in the second item on page 40, for two additions to the main building of the Walter Reed General Hospital, the estimate contained in the Book of Estimates is \$1,497,800. You have reduced that, I see, in this memorandum which you have just given us, to \$932,646.

Gen. IRELAND. Yes, sir.

The CHAIRMAN. That is a reduction of practically \$500,000?

Gen. MARSHALL. That is a one-third reduction. That was necessary to keep within the amount that the Chief of Staff would permit us to include in the estimates. So the amount was reduced one-third.

Gen. IRELAND. May I say that this addition to the hospital at Walter Reed is a part of the development of this medical center at the Walter Reed Hospital, and it all fits into that one scheme, just as everything that is to be put on the Walter Reed ground is to fit into that particular scheme.

The CHAIRMAN. There is an item on page 41 of the tentative draft of the bill for the Walter Reed medical center, and you are asking for an appropriation of \$500,000 as a part of a total cost of \$10,000,000.

Gen. IRELAND. It is unfortunate that that should have gotten in there in that way, Mr. Chairman. The complete development of the Walter Reed Hospital, which means having out there the Army Medical School, the Army Medical Museum, and all of our activities for the building up of this hospital as a medical center is estimated—and this was in 1918, when everything was at the very highest price, or early in 1919—as \$10,000,000. It is unfortunate that that should have gotten in there that way, because that should not have gone into that item.

Everything that is going into the Walter Reed Hospital is planned on the development of this hospital center there.

We have had an Army Medical School since 1893. The Surgeon General, during the Civil War, recognized and so reported to the Secretary of War, the necessity of an Army Medical School. But it rested for 30 years, until 1893, when it was established down here in the museum. That school has been moved three different times. It remained at the museum until the museum and library could not accommodate it any more, and then it was moved to Thirteenth Street, and after the school outgrew the building there, it was moved to where it is now located, on Louisiana Avenue and Fifth Street. We are paying \$20,000 a year rental for the building where this school is located. This is one of the activities which is finally to go

to the Walter Reed Hospital, and we are asking for a start on that building in this appropriation. It is estimated that the building when completed will cost \$2,000,000. They have allowed us as a start for that building \$500,000 for this year.

In the Army Medical School we have a laboratory where all of the sera were manufactured which protected our men during the war from typhoid fever, and from paratyphoid, and where all the sera were manufactured by which we tried to protect the men from respiratory diseases, and where all experiments have been carried on as the result of which we hope some day to get control of the respiratory diseases, just as we now have of the intestinal troubles.

The CHAIRMAN. You are renting quarters?

Gen. IRELAND. We are renting quarters for this school now; yes, sir.

The CHAIRMAN. How much do you pay per annum for the rental of that building?

Gen. IRELAND. We pay \$20,000. It is just a few dollars more or less than \$20,000, I am not sure which. We have been paying that amount approximately here in the city of Washington for a good many years.

The CHAIRMAN. Is the library also at the Medical School?

Gen. IRELAND. No; the library and museum are located in a building at the corner of Seventh and B Streets SW. They have been located there for a good many years. They are in a so-called semireproof building, which has been condemned by the Commission on Fine Arts.

The CHAIRMAN. They have a good many fire escapes attached to that building, as I have noticed in passing it.

Gen. IRELAND. Yes. We have there a collection of medical books which is next to the largest collection of that kind in the world. The only medical library larger than our library is the one in Paris. They are not in a so-called fireproof building. I would not have you believe that when I speak of the condemnation of this building that that means it has been condemned for this year or next year; but it has been condemned as not suitable for the development of the buildings in the Mall, and sooner or later it will have to be removed from there. It is the desire of the department and of the profession in the country that this library and museum shall be moved to Walter Reed Hospital and given a permanent home there, and that the building shall be in keeping with the other buildings out there. The building where the library is now located is not in keeping with the beautiful buildings which are to be constructed on the Mall.

The CHAIRMAN. Of course, General, you understand that the Congress and the country is facing a deficit of about \$3,000,000,000 this year. Therefore we have to cut to the bone, especially as far as new construction is concerned. We hope that within another year or two the affairs of the country will be so adjusted that we may be more liberal with important projects like this. But this year we feel we will have to go very slow so far as new projects are concerned. I want you to understand the difficulties that confront the committee.

Gen. IRELAND. The Medical Department is willing to go onto a lean ration, if you will just give us something so that we can keep on and make a little progress and not stop the machinery altogether.

We can not stop in taking care of our sick, and if we can have something to live on we are perfectly satisfied.

The CHAIRMAN. Of course, the committee have always felt that one of the main things that we must look after is the welfare of the sick in the hospitals.

Gen. IRELAND. That is the object of the Medical Department, in preventing illness and taking care of the sick, after they come down. We are trying to do that in a perfectly modern way and in an acceptable way, not only to the sick themselves, but to the people of the country who are interested in these wards of the United States. We have the money for the purchase of the land there.

The CHAIRMAN. That was carried in the Military Academy appropriation bill. There was a decision of the comptroller that prevented you from using that money when it was carried in the regular appropriation bill last year, and in order to wipe away the technicalities the item was again carried in the Military Academy bill so as to meet the comptroller's objection?

Gen. IRELAND. Yes, sir.

Mr. MCKENZIE. General, one of the things with which we are all confronted on the floor, and one which embarrasses the members of the committee to some extent, is that whenever we are asked to make an appropriation for additional beds for the Military Establishment, for additional hospital facilities, we find that we now have hundreds of vacant beds in military hospitals throughout the country. And, of course, many men wonder why we do not utilize those facilities.

What I want to bring out, and what I want to ask you about, is this: While that is true, that we have probably thousands of vacant beds in the military establishment throughout the country, yet we are asked to make appropriations for the Public Health Service, paralleling all these great hospital facilities that are under the military establishment, for the purpose of taking care of the discharged soldiers and sailors. To my mind the sane and sensible thing for Congress and the country to do is to simply change the law by writing in a few words permitting discharged soldiers and sailors to enjoy these facilities, so far as they may extend, now furnished by the military hospitals of the country, and not ask that we parallel the same facilities under the Public Health Service. What is your judgment about that?

Let me say this, further, before you answer that question. It is very difficult for me to understand why a citizen of our country, who puts on the uniform of a soldier, who, while he is wearing that uniform, is permitted to enter one of our military hospitals, when he is discharged to-day and to-morrow puts on civilian clothes, can not get into a military hospital, and we are asked to put up another hospital so he can go in there, after he gets on his civilian clothes. I can not understand that. Perhaps you can explain it?

The CHAIRMAN. To supplement what Mr. McKenzie has just said, there is quite a long article on that very proposition either in the Washington Post or the Washington Herald of this morning.

Gen. IRELAND. The report which I have before me, which is under date of March 12, shows that we have 2,900 vacant beds in our military hospitals. These are in temporary hospitals. Of course, as the Government abandons a camp, the hospital at that camp is abandoned too. We are abandoning hospitals all the time, and we are making

arrangements to abandon hospitals in the very near future. We abandoned two hospitals on the 15th of last month.

Whenever we abandon a hospital, or have any intention of abandoning one, we notify the Public Health Service, and they have the option of taking that hospital over. If the Military Establishment is going to be an efficient establishment and continue to carry on, it can not carry on with patients who are to remain for an indefinite period. There must be a period when they are through with the Military Establishment and are to be discharged from the Military Hospitals, and accept the compensation which the Government provides for them.

In addition to the compensation that a man who was disabled in the service during this war receives, the law has provided that he shall be given further treatment for any disability which he has acquired in the service, and the War Risk Insurance Bureau has been designated as the instrumentality to give this treatment.

Mr. McKENZIE. I do not see yet the necessity of setting up a different organization to take care of that man, to see that he gets medical treatment. It seems to me you could segregate one of your hospitals, or two, or a dozen of them, for that matter, if necessary, to take care of these discharged men and they would get the benefit of the war-risk insurance.

Gen. IRELAND. That could be done if a law were passed that way. In doing what we have done we have simply followed the law of the land. You are asking me if we could do something else if you pass such a law, and my answer to that is yes.

Mr. GREENE. As I understand the theory of the proposition, the Army hospital is only established for the use of the Army, to restore the Army's own people who can be restored, and when its own people have got to the point where the facilities they have will not do it, they are discharged from the Army and the Army can not spend any more money on them.

Gen. IRELAND. And the Army is not carrying on a function of an Army; it is carrying a tremendous overhead of dead material that will never be fit to be a part of an active army.

Mr. GREENE. Those people do not get away from the obligation of Government to take care of them, but it ought to take care of the bookkeeping account in another way.

Mr. McKENZIE. But the same gentleman, Uncle Sam, is paying for all of it.

The CHAIRMAN. I understand the Public Health Service has now a lot of hospitals.

Gen. IRELAND. Yes, sir.

The CHAIRMAN. Or buildings for hospital purposes, to take care of this very class of discharged soldiers we have been speaking about.

Gen. IRELAND. Absolutely.

The CHAIRMAN. And the Public Health Service, as I understand it, has charge of the marine hospitals?

Gen. IRELAND. Yes, sir.

The CHAIRMAN. Of course, those hospitals, generally, are used for the sailors of the merchant marine not alone of this country, but the sailors of the merchant marine of other countries. I presume it is necessary for the Public Health Service to have these special hospitals to take care of the discharged wounded men?

Gen. IRELAND. Yes, sir; but there are other cases that must be cared for. The tubercular cases must be cared for, and they are trying to care for them in certain parts of the country. Patients with mental derangements, of which we have had a good many thousands, must be cared for, and they are making an effort to care for those patients in hospitals already established.

If a man from the State of New Jersey becomes mentally deranged, after we have done all we can for him and have tried to restore him to normal, if his case is going to last a very great length of time, or permanently, we communicate with the War Risk Insurance Bureau and they locate this man in some institution in the State of New Jersey, so that he will be close to his home.

Mr. FIELDS. Have you the authority under the law to admit civilians to a military hospital?

Gen. IRELAND. Under the regulations established by the Secretary of War we can admit civilians to our hospital, in cases of emergency only. There is also a regulation established by the Secretary of War that we shall look out for any former soldier who reports to one of our hospitals. Of course, we report that kind of a case immediately to the War Risk Insurance Bureau and we get our compensation for taking care of such a man in the hospital, not from the War Department, but from the War Risk Insurance Bureau.

Mr. FIELDS. So there is nothing to prevent you from discharging a man to-day and retaining him or readmitting him to a hospital immediately upon his discharge?

Gen. IRELAND. But we report his case immediately to the War Risk Insurance Bureau and get our compensation for his maintenance from that department of the Government.

Mr. FIELDS. Is that being done in any instance?

Gen. IRELAND. Yes, sir; there are a good many war-risk insurance patients in our hospitals. Just the other day they asked us to take care of about 25 patients at Oteen, N. C., where we have a tuberculosis hospital, just outside of the city of Asheville. Then we have certain tubercular patients at Fort Bayard, N. Mex., and the Public Health Service wants to take over that hospital as soon as we abandon it. Then we have scattered throughout our different general hospitals in the country quite a few patients belonging to the War Risk Insurance Bureau.

The CHAIRMAN. You have a tuberculosis hospital at Denver, also?

Gen. IRELAND. Yes, sir. We hope to keep the hospital at Denver and also that one at Oteen permanently.

The CHAIRMAN. By the by, when Col. Wolfe was before us the other day, just to digress for a moment, I called to his attention that there was considerable complaint made about the management of the Oteen Hospital. Members of the Military Committee received telegrams of protest. I presume an investigation of that matter has been made, has it not?

Gen. IRELAND. It is a peculiar coincidence that you should have brought this matter up just now. I requested of the Inspector General that he send one of his best men down there, as soon as those telegrams came, and that report, or rather the report of this inspector was placed on my desk just as I was starting for this hearing. It has been completed, and my understanding is that the inspector, after remaining there for at least a couple of weeks, found Oteen to be a well administered hospital, where the patients were receiving the

very best of attention. There were a number of complaints made about that hospital and addressed to the Members of the House and Senate, and I personally think that a copy of that report ought to be sent to your committee so you will know that we are doing the correct thing by these patients. This war has demonstrated one thing, and that is what can be done by propaganda. If somebody will just start a little report and get somebody else to pass it along it becomes an endless chain, and that is exactly what occurred at Oteen. The patients are being well cared for at Oteen.

The CHAIRMAN. I think it will be very helpful if you can find it convenient to send a copy of the report of the Inspector General's office on that particular matter to the committee, because I feel quite sure when we go on the floor with this bill we will be asked questions about the Oteen Hospital. I am told that many telegrams were sent to Members of the House.

Gen. IRELAND. They all finally came to my office. The report itself is a very voluminous document. The Inspector General always paragraphs a report of that kind, and his report to the Secretary of War takes up probably half a dozen typewritten pages. I will ask the Secretary of War if a copy of the Inspector General's review of this report may be sent to each member of the committee.

Mr. GREENE. I suppose you have to contend always with a certain amount of irritation and captious criticism of hospitals and places of that kind?

Gen. IRELAND. There is a surprisingly small amount of that. But there is always something going on of that description. That is particularly true in a tuberculosis hospital. A tuberculosis patient is a very difficult one to satisfy. It is because of his state of mind, and people who go into a tuberculosis hospital say many strange things. For instance, they have a capricious appetite. Maybe a tuberculosis patient will want corn-beef hash to-day and some other delicacy to-morrow. One of the very curious complaints received by the Secretary of War about a year ago was from somebody who went into the hospital at Denver and was horrified to see corn beef and cabbage placed before one of the patients in that hospital. That happened to be what the patient was favoring that day. This particular complaint was investigated, and it was found that the authorities at the hospital had catered to this patient's appetite from day to day. Of course when he got the corn beef and cabbage he did not want it. That is an extreme case, but that is a case which actually happened at Denver. The complaints we are receiving from our hospitals are very few.

The CHAIRMAN. Patients, especially if they have that sort of a disease, are apt to be very irritable and the least little thing grates on their nerves.

Gen. IRELAND. We have patients in some of the hospitals who have been there for a year and a half, and it is remarkable, going through the wards, to see the fine spirit that exists among them. A man who has had a broken leg, and who has an osteomyelitis, who has been in the hospital for a year and a half and has been operated on 6 or 8 or 10 times, will be cheerful and smile when you talk with him. It is difficult to understand how he can carry that smile on his face. But if you go through Walter Reed Hospital you will see long wards of such patients. They are all in good spirits.

The CHAIRMAN. We are very much obliged to you, General.

BARRACKS AND QUARTERS.

STATEMENT OF BRIG. GEN. R. C. MARSHALL, JR., CHIEF OF CONSTRUCTION DIVISION.

The CHAIRMAN. General, your first item is on page 35, for barracks and quarters. We will be glad to have your explanation of that item.

I see that we appropriated for that purpose in the act for the fiscal year 1920, \$7,500,000, and that the estimate for the fiscal year 1921 for the same purpose, which we are now considering, carries the sum of \$14,797,000, which is practically double the amount that we allowed you for that item in the last act.

Gen. MARSHALL. I want to modify that amount. It should be \$13,522,000. In that is included the estimates under incidental expenses which were heretofore carried under the item for incidental expenses, approximating \$3,000,000.

The CHAIRMAN. Of that amount of \$13,522,000, \$3,000,000 is to be charged to incidental expenses?

Gen. MARSHALL. Yes.

The CHAIRMAN. Has there been a deduction of that same amount in the estimate for incidental expenses?

Gen. LORD. Yes. That has been eliminated entirely from the estimate for incidental expenses.

WAR DEPARTMENT,
OFFICE OF THE CONSTRUCTION DIVISION OF THE ARMY,
Washington, D. C., March 31, 1920.

From: Chief of Construction Division.

To: The chairman of the Committee on Appropriations, House of Representatives, Washington, D. C.

Subject: Wording of appropriation act.

1. In order that the authority necessary for the construction of certain projects as presented to your committee in the hearings may be carried in the appropriation bill, it is requested that the present wording of the committee draft of the appropriation bill be changed to the following. The items enumerated are all in excess of \$20,000, and unless each item is specifically mentioned section 1136, Revised Statutes, would prevent its construction, even though the amounts are appropriated.

- (a) Barracks and quarters, sea coast defenses: For construction and enlargement of barracks and quarters for the Coast Artillery, and other buildings in connection with the adopted project for seacoast defenses, including the installation therein of plumbing and of heating and lighting apparatus, to be expended as in the judgment of the Secretary of War may be necessary, provided that not to exceed the following sums may be used in the erection and completion of buildings enumerated at the places named: \$37,050 for an Ordnance storehouse at Fort Crockett, Tex.: \$25,100 for an Ordnance magazine at Fort Hamilton, N. Y. (act Mar. 3, 1919, vol. 40, p. 1306, sec. 1, submitted)..... \$234, 647
- (b) Seacoast defenses, Philippine Islands and Hawaii: For continuing construction of the necessary accommodations for the Seacoast Artillery in the Philippine and Hawaiian Islands, and for temporary cantonments for overseas garrisons, to be expended as in the judgment of the Secretary of War may be necessary, provided that not to exceed the following sums may be used in the erection and completion of the projects enumerated at the places named: \$100,600 for salt-water system, Fort Mills, P. I.; \$90,000 for concrete lorch dock, Fort Mills, P. I.; \$25,000 for four sets family quarters for Ordnance machinists, Fort Mills, P. I.; \$50,000 for two barracks, Fort Kamehameha, Hawaii; \$30,000 for roads, Fort Kamehameha, Hawaii (act Mar. 3, 1919, vol. 40, p. 1307, sec. 1; submitted).. 345, 300

- (c) Army quarters, storehouses, etc., Canal Zone, Panama Canal: For continuing the construction of barracks, quarters, storehouses, and other buildings necessary for accommodating the Coast Artillery troops to be stationed in the vicinity of the Panama Canal, including water, sewer, and electrical systems, roads, walks, etc., provided that section 1136, Revised Statutes, as amended by act of February 27, 1877 (19 Stat., 242), shall not apply to buildings or structures to be constructed with funds from this appropriation (act Mar. 3, 1919, vol. 40, p. 1308, sec. 1; submitted)..... \$81,000

R. C. MARSHALL, JR.,
Brigadier General, United States Army, Chief of Construction Division.

Gen. MARSHALL. I thought it would be easier for the committee to view all of the appropriations rather than to take one at a time, and then take up the individual items, because these appropriations are all interlocked. If you appropriate so much under barracks and quarters to do a specific thing, the amount for heating comes out of regular supplies, and the amount for plumbing comes out of waters and sewers, and so on.

Mr. GREENE. Does that subdivision of an item, such as you just indicated, serve a practical purpose, so far as construction is concerned?

Gen. MARSHALL. No; it does not.

Mr. GREENE. Is it in any sense, more or less of a hindrance?

Gen. MARSHALL. Yes, sir; it is a nuisance.

Mr. GREENE. What purpose does it serve, so far as accounting is concerned?

Gen. LORD. Nothing, particularly. I have long thought that when the bill is rewritten the items pertaining to construction should be carried in a construction appropriation, so you will know exactly what you are expending for that purpose.

Mr. GREENE. It seems they made a kind of shredded proposition out of it, and you do not know whether you get the substance or not.

Gen. LORD. It is absolutely unsatisfactory.

Construction Division of the Army—Summary of estimates for maintenance, repair, and operation of utilities for fiscal year 1921, showing cash expenditures for fiscal year 1920, based on actual expenditures for first half fiscal year doubled and the use of salvage and surplus materials.

Class.	Classes of post or station.	Number of posts.	Barracks and quarters. ¹	Regular supplies.	Water and sewers.	Roads, walks, wharves, and drainage.	Construction and repair of hospitals.	Incidental expenses.	Military post exchanges.	Shooting galleries and ranges.	Hospital stewards' quarters.	Grand total.	Grand total Philippine Islands. ²
1	National Army camps, centrally heated. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	4	\$685,400.00 1,071,147.28 426,647.68 622,802.32	\$503,130.00 874,833.00 575,708.20 448,185.32	\$407,000.00 799,057.72 575,708.20 223,349.52	\$242,600.00 251,264.00 74,284.98 42,488.76	\$51,180.00 74,284.98 74,284.98 42,488.76	\$1,000.00 261.00 208.00 208.00	\$18,000.00 1,000.00 1,000.00 1,000.00	\$4,000.00 6,208.00 6,208.00 6,208.00	..... ..... ..... .....	\$1,913,310.00 3,070,566.98 1,733,741.06 1,336,826.92	....................
2	National Army camps, individually heated. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	12	2,386,000.00 3,038,616.56 1,170,191.60 1,868,424.96	1,528,000.00 2,737,905.96 1,393,350.00 1,344,555.96	1,394,000.00 2,005,592.56 1,535,244.00 670,348.56	915,000.00 979,436.18 551,972.00 127,464.18	182,000.00 259,564.00 259,564.00 126,000.00	3,000.00 880.00 354.80 2,200.00	57,000.00 1,000.00 1,000.00 37,000.00	12,000.00 6,208.00 6,208.00 10,000.00	..... ..... ..... .....	6,474,000.00 9,228,323.26 5,217,529.60 4,010,793.66	....................
3	Major special camps. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	9	1,647,800.00 1,657,766.48 723,554.00 934,212.48	905,000.00 1,126,035.96 453,758.00 672,277.96	839,000.00 876,802.28 541,628.00 335,174.28	587,000.00 678,030.09 414,288.00 263,732.09	126,000.00 123,978.00 123,978.00 15,000.00	2,200.00 421.974.00 421.974.00 600.00	37,000.00 1,000.00 1,000.00 6,000.00	10,000.00 500.00 500.00 .....	..... ..... ..... .....	4,154,000.00 4,464,112.83 2,458,716.00 2,005,396.58	....................
4	Motor Transport Corps. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	3	137,400.00 357,874.48 202,173.90 155,700.58	190,000.00 228,339.51 116,263.18 112,046.33	200,000.00 185,040.54 129,453.16 55,587.38	150,000.00 72,150.17 62,027.98 10,122.19	15,000.00 18,000.00 18,000.00	600.00 77,233.42 77,233.42 1,000.00	6,000.00 920.00 920.00 .....	..... ..... ..... .....	..... ..... ..... .....	699,000.00 962,324.70 528,868.22 333,456.46	....................
5	Army supply base. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	6	1,039,000.00 477,012.00 127,012.00 350,000.00	600,000.00 466,024.00 266,024.00 200,000.00	490,000.00 406,086.00 316,086.00 90,000.00	200,000.00 242,122.00 242,122.00 .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	2,330,000.00 1,591,244.00 951,244.00 640,000.00	....................
6	Depots and terminals. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	24	2,457,500.00 2,559,437.92 1,590,437.92 1,400,000.00	820,000.00 1,020,069.14 620,069.14 400,000.00	920,000.00 912,943.12 512,943.12 400,000.00	500,000.00 554,253.84 324,253.84 230,000.00	..... ..... ..... .....	2,500.00 20,722.72 20,722.72 .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	4,700,000.00 5,046,724.02 2,646,724.02 2,400,000.00	....................
7	Major hospitals. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	6	37,468.00 37,468.00	332,540.00 262,540.00	157,092.00 122,092.00	58,900.00 58,900.00	1,136,676.00 936,676.00	23,000.00 23,000.00	400.00 400.00 ..... .....	..... ..... ..... .....	..... ..... ..... .....	1,723,076.00 1,438,076.00..........	....................

¹ Expenditures in "Incidental expenses," fiscal year 1920, have been added in the "Barracks and quarters" total expenditure, fiscal year 1920.

² Includes also barracks and quarters, Philippine Islands.

Gen. MARSHALL. The total amount we are asking for is \$38,754,685; but of that only \$6,086,075 is for new construction, so that in the beginning I want to nullify the idea that might be in your minds that these appropriations are all for construction. The estimate here is for fire prevention, for the operation of such things as power plants, pumping plants, sewage-disposal plants, electrical plants, filtration plants, and the like, and for maintenance and repair of buildings, roads, railroads, and the like. That is really what the estimate is for, and not for construction, in the main. The construction items I will take up separately and present to the committee.

I wanted to talk first generally on the subject of what we classify as utilities. This is divided into fire prevention, operation, and maintenance and repair. This sheet, which is headed, "Summary of estimates for maintenance, repair, and operation of utilities for the fiscal year 1921," shows the cash expenditures for the fiscal year 1920, based on the actual expenditures for the first half of the year doubled, and the use of salvage and surplus materials.

Going to the subject of barracks and quarters, the first item is for National Army camps, centrally heated, of which there are four during the current fiscal year. The cost will be \$1,071,147.28 for those four camps under barracks and quarters for the year ending June 30, 1920. That is divided into actual cash expenditure from this year's appropriation for barracks and quarters, \$448,344.96 (of which \$149,261 is from appropriation incidental expenses), and surplus materials to the extent of \$622,802.32.

Mr. McKENZIE. Let me ask you if those are appropriations you are speaking of now in the first column under the head of "Barracks and quarters," in the summary you have prepared, and if the smaller sheet indicating the various divisions that are to be covered by that appropriation is to be a guide to us in making the appropriations?

Gen. MARSHALL. So far as new construction is concerned. Under the law we can not take up a project in excess of \$20,000 without specific authority by Congress, so those projects have been placed on the smaller sheet.

Mr. McKENZIE. That does not affect the items for sewer and water supply, heating plants, and utilities?

Gen. MARSHALL. No; that is another matter.

Mr. McKENZIE. But the appropriations are carried together in one item?

Gen. MARSHALL. In one item.

The CHAIRMAN. I notice that the sum of \$1,071,147.28 was the total of the amount you used for that purpose out of the appropriation for the fiscal year 1920; is that correct?

Gen. MARSHALL. No; that is made up of the two items a little below there. If you add those two items you will find that they make up that amount. The actual money from this year's appropriation is \$448,344.96 for barracks and quarters. The material on hand, i. e., surplus material left over from the war, is the only thing that enabled us in any way to get along this year.

The CHAIRMAN. How much surplus material have you still on hand?

Gen. MARSHALL. It has decreased very much. A good deal of it has been sold, and that which remains on hand is odd, generally

speaking. Of course, we have some. As you may notice, we have reduced the estimate for those four National Army camps from \$1,071,147.28 to \$685,400.

Mr. McKENZIE. Let me get this matter straight in my mind. In the first item, that is made up of four different smaller items, and the two items at the bottom, when put together, make up the third one from the bottom, or the second one from the top, which is \$1,071,147.28.

Gen. MARSHALL. Yes.

Mr. McKENZIE. That represents the cash and surplus material that you have used in construction work around barracks and quarters and in taking care of utilities for the present fiscal year?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. And the first item is the amount you are asking for for the next fiscal year?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. That amount is \$685,400.

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. What we will be interested in knowing is what you expect to do with that amount of \$685,400.

Gen. MARSHALL. The four camps that that provides for are Camp Custer, Camp Devens, Camp Funston, and Camp Grant. Similarly, you will find for the other 12 camps a little different estimate. That is because those four camps I have just mentioned are steam heated throughout, and the rest of them are not steam heated throughout. The rest of them are steam heated only in the hospitals and in the officers quarters, the barrack buildings being heated by room heaters.

Mr. McKENZIE. For which you are asking \$2,386,000.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. How many soldiers are in those camps at the present time?

Gen. MARSHALL. It varies very much. None of them has anywhere near its capacity, and some of them have only very few.

The CHAIRMAN. Are all the buildings at these camps being used?

Gen. MARSHALL. That varies, too, with the local commanding officers. In many of the camps the area used is restricted; in other camps they use a very less restricted area.

The CHAIRMAN. The amount you are asking for would cover all the buildings in the camp; is that not true?

Gen. MARSHALL. Only on a limited occupancy—yes. It would cover all buildings in the camps, but having in contemplation that a great many of the will not be occupied.

Mr. McKENZIE. Are we to understand from this estimate that you contemplate taking care of and keeping in repair all of the 16 large National Army cantonments; is that correct?

Gen. MARSHALL. Yes. I would like to expand on that.

The CHAIRMAN. I want to see whether I get your former answer correctly. You will expend these amounts on all the buildings, even should they not be occupied; was that your answer?

Gen. MARSHALL. So far as it will go, to protect them. My answer to that question is that this amount is not sufficient to protect all the buildings.

Mr. GREENE. Before you go ahead, may I ask you whether you intend in your description to give us an idea of the present character of construction and its probable life, and so on?

Gen. MARSHALL. Yes.

Mr. MCKENZIE. I would like to ask you another question about the matter of policy. Have you ever contemplated taking down some of these buildings and using the material in the repair of others that it might be felt should be preserved?

Gen. MARSHALL. We are actually doing that in some places. So far as those buildings that might go to pieces are concerned, we have authority to do that where we can utilize the material to advantage. So far as the occupancy of these camps is concerned, as to how many soldiers shall be in them and how many buildings shall be occupied, I have nothing to do with that. I have no voice in that. That is determined by the Chief of Staff's office. I have been instructed that these camps, these places enumerated on these sheets, will be continued until I am notified to the contrary.

The amount of money asked for here can not hope to keep in repair the tremendous number of buildings that are at the camps and cantonments. Necessity will force some of them being unoccupied. For example, Camp Taylor. I had a long conversation with Col. Elliott, who has just been down at Camp Taylor and has gone over it thoroughly. He says that at least 50 per cent of the roofs will not last another year.

The CHAIRMAN. That camp, of course, is one of the camps that Congress proposes to abandon?

Gen. MARSHALL. Yes, sir; but I am using that as an illustration of all of them, because all of them have the same general character of roofs. At least 25 per cent of the buildings, if they are to be protected so as not to go to pieces as a result of the effect of the elements upon them, will have to be entirely reroofed this summer, and at least 50 per cent should be entirely reroofed before next spring and the other 50 per cent will have to be entirely reroofed next summer. That is a condition that is typical, with, of course, some variations, of all these cantonments.

The CHAIRMAN. Take Camp Taylor, for instance. Congress has passed legislation providing that Camp Knox shall be built up and that the organizations at Camp Taylor shall be moved to Camp Knox. Do you think it would be good policy to expend any great sum of money at Camp Taylor in view of that fact?

Gen. MARSHALL. Resting on that fact alone, no, sir. What the other contributing causes for occupancy may be, I do not know.

The CHAIRMAN. Would it not be advisable, in a case like that, to tear down some of the buildings at Camp Taylor and use the material in those buildings for making repairs temporarily at least at the other camps?

Gen. MARSHALL. A general order has been issued specifying that if they are in a place where it is practical to do so, the commanding officer may ask for that authority, and the authority will be given him. But when you come to roofing material—the two principal items we have are roofing and underpinning, and when you come to those two things your tearing down does not get you anywhere.

Mr. GREENE. I was going to ask as to whether or not the idea of roofing what is at best a temporary building, and expending on the roof this very disproportionate amount of money, as compared with the total cost and value and ultimate life, was not a question relating to some doubt as to the business economy involved in it.

Gen. MARSHALL. I think there is no economy in keeping these buildings.

Mr. McKENZIE. I think you are right about that, but is it not true that when these buildings were constructed it was understood that the roofing put thereon was what was called three-year roofing?

Gen. MARSHALL. Two and three year roofing.

Mr. McKENZIE. And the life of the roofing would be two and three years?

Gen. MARSHALL. Yes.

Mr. McKENZIE. If we are going to start on a program to make all these camps substantial, we will have some job on our hands.

Mr. FIELDS. Is that roofing metal roofing?

Gen. MARSHALL. It is paper.

Mr. FIELDS. With regard to Camp Taylor and Camp Knox, could not the buildings at Camp Taylor, many of them, or the material in them be taken down, removed, and used at Camp Knox?

Gen. MARSHALL. You can not do that to any great extent. You take one of our barrack buildings that cost \$5,000. The labor on that building is \$2,500. You can not take that down and put it anywhere else very well.

The CHAIRMAN. You would have to spend more money for labor to tear it down?

Gen. MARSHALL. Yes.

Mr. FIELDS. It seems to me it is worthy of consideration in view of the price of lumber being so high.

Gen. MARSHALL. You can do it to a limited extent.

Mr. FIELDS. If you have a building at Camp Taylor of given dimensions and you want to construct a similar building at Camp Knox, how would the cost of material on the ground, all new material, on the one hand, compare with the material you could get out of this building that is already cut to certain sizes?

Gen. MARSHALL. You would net not more than 10 per cent, I would say, as an outside figure, of the original cost of the material.

Mr. FIELDS. I know that when a roof deteriorates that is about worth what you get out of the material to have it removed, and this material being newer I wondered if you could make some saving in utilizing that material.

Gen. MARSHALL. I think the answer to that is the fact that in selling the National Guard camps we got about 7 per cent of the value of the material.

Mr. GREENE. What does experience show about the reconstruction value that may be in this cement and other mixtures which we are using more or less in recent years? Is there any salvage to that at all?

Gen. MARSHALL. You mean the building cement?

Mr. GREENE. Yes.

Gen. MARSHALL. No. It will cost you money to get it out of the way.

Mr. GREENE. There will be no salvage value at all?

Gen. MARSHALL. The salvage is a negative quantity, ordinarily speaking.

Mr. GREENE. Are the materials themselves susceptible of being reworked?

Gen. MARSHALL. Not at all.

The CHAIRMAN. On that very subject, I noticed when I was in Europe, that the Germans had used a great deal of concrete construction, and it seemed to me as though they had made concrete slabs that could be hastily thrown together, and this would give you a comparatively substantial building in a short while for a comparatively small amount of money. I do not know whether you were on the other side and saw any of that.

Gen. MARSHALL. No, sir.

The CHAIRMAN. Doubtless some of the officers have told you about it. In the long run, would not there be considerable saving by putting up that kind of construction in this country?

Gen. MARSHALL. I have worked out a complete scheme for housing the Army in the National Army cantonments, and I have it here if the committee wants to go into that. I may say that this has been sent to every commanding general, and it has generally received approval.

Mr. FIELDS. How thick is that wall?

Gen. MARSHALL. Probably at the bottom it will be a brick and a half.

The CHAIRMAN. That is regular building concrete construction. You put up your double wooden frames and pour in your concrete?

Gen. MARSHALL. Yes. That is in the form of an apartment house, and it is on the theory that 75 per cent of the officers would be in apartments and the other 25 per cent in houses. I have two plans, one of which is in regard to the remodeling of the present buildings, and the other is for replacing the present buildings.

Mr. FIELDS. That has not a ventilated wall?

Gen. MARSHALL. No, sir.

Mr. FIELDS. That would be unsatisfactory for residence purposes unless it had a ventilated wall.

Gen. MARSHALL. It is a three-story apartment house without any mechanical equipment, and we find that the brick wall would be the best wall to be used. Then we have the type of barrack building, which would give the enlisted men the same accommodations that they had in the standard barracks before the war. We figured this out on the three-story basis, so it will fit into the place where the barrack buildings are at these cantonments and utilize all the underground facilities which we have there. This is figured out for that purpose, and has been sent to the commanding general of every department and every divisional camp, and of all special camps, and all of them have been invited to comment upon it, and all of them have commented upon it. I must confess I approached this matter with some fear and trembling; that is, the matter of proposing to put officers in apartment houses, 75 per cent of them. But I do not believe there is a single objection to it from any of these commanding generals. If there is one I do not recall it now. The apartments generally have two bedrooms, dining room, a sitting room, and a kitchen in the back, and a room for servants and a locker down in the cellar. Then we have some larger ones for the older officers. That is the scheme which I personally think is the one we should follow for the future housing of the Army.

The CHAIRMAN. Some years ago I was in Honolulu and they were constructing new quarters there. The method used was to squirt the cement onto a wire framework.

Gen. MARSHALL. That is what you call a metal-lath stucco.

The CHAIRMAN. Has that worked successfully?

Gen. MARSHALL. In Honolulu the construction has to be different from what it is in many parts of this country. There we used at Schofield Barracks a concrete barracks and a stucco and frame building. At the other places we are using a frame barrack; at the Coast Artillery post in Honolulu they are using frame and stucco buildings. In that climate the advice we have always had is that that is the most suitable and the least expensive kind of building. This plan I have here contemplates that the officers' quarters shall be made of hollow tile with stucco. Because of the present cost of lumber, the difference between the cost of construction of a first-class frame building and a hollow-tile stucco building is very little, not more than 5 per cent to-day.

The CHAIRMAN. And the hollow tile is very much more serviceable and lasts a good deal longer?

Gen. MARSHALL. And it costs less for maintenance.

The CHAIRMAN. Will you proceed with the item for barracks and quarters? You explained that part of the item relating to the centrally heated National Army camps and the individually heated National Army camps.

Gen. MARSHALL. The same explanation serves in each case—that this amount under barracks and quarters is the combination of what was expended under barracks and quarters and incidental expenses during the current year. The figures for any year other than the current year would be of little value, because these camps were so thoroughly occupied. I might state that during the war the operation of utilities required 541 men in the utilities detachment at each of these places. These utilities detachments were supplemented by such a number of men from the labor battalions as was necessary. Our utilities officers had available very many more than 541 men during the war. This present estimate is based on an average of 210 men in the utilities detachments at each of the places, of whom 52 are to be used for fire-protection purposes, leaving a net of 158 for operation, maintenance, and repair. That is about as near as we can estimate it. It will be one-fourth of the number we had during the war.

The CHAIRMAN. Are these men largely carpenters?

Gen. MARSHALL. There are all kinds of workmen—carpenters, bricklayers, tinsmiths, blacksmiths, etc.

The CHAIRMAN. They are in the building trades?

Gen. MARSHALL. They are in the building trades; yes, sir.

The CHAIRMAN. Are they enlisted men or civilians?

Gen. MARSHALL. They are civilians, mostly.

The CHAIRMAN. How much do they earn?

Gen. MARSHALL. The average is \$5 per day per man.

Mr. McKENZIE. I think it would be well if the general at this point in his testimony would include a detailed statement showing where all this money is to be expended. Take, for instance, the National Army camps. I presume you have that for those four camps?

Gen. MARSHALL. Yes.

The CHAIRMAN. Just indicate, if you please, General, how much you intend to expend at each one of these places.

Gen. MARSHALL. If you will look at the column where those small figures are, 4, 12, 8, 3, and so on, that will show you the number of places of that particular designation. We can give you the names of those places.

The CHAIRMAN. We would like to have them.

Mr. MCKENZIE. You can include that in your statement, showing, for instance, that there are four of those camps first referred to, and how much you expect to spend, for instance, at Camp Grant, how much at Camp Funston, and so on, giving us a detailed statement so we will have some idea of where the money is going to be expended.

Gen. MARSHALL. The amount at each of those four camps is almost identical. When you get through with the list you have about 500 places.

Mr. FIELDS. There is about the same character of repair work at each of the places?

Gen. MARSHALL. Yes, sir.

Mr. MCKENZIE. Anyone reading the hearings and reading that statement will say, "What are we going to do with that money?"

Gen. MARSHALL. This is not construction; the construction items I am going to give you in detail.

Mr. MCKENZIE. This is for utilities.

The CHAIRMAN. You have this condition on the floor of the House: The New England Members will be very largely interested in what you are going to do at Camp Devens, and they will ask questions about that. The committee makes greater headway if we have the detailed information that we can give to the individual Members. The object in asking for the detailed information is to use it on the floor of the House.

ARMY APPROPRIATION BILL, 1921.

Construction Division of the Army—Summary of estimates for maintenance, repair, and operation of utilities for fiscal year 1921, showing cash expenditures for fiscal year 1920, based on actual expenditures for first half of fiscal year doubled, and the use of salvage and surplus materials.

Class	(Classes of post or station.	Barracks and quarters. ¹	Regular supplies.	Water and sewers.	Roads, walks, wharves, and drainage.	Construction and repair of hospitals.	Incidental expenses. ¹	Military post exchanges. ¹	Shooting galleries and ranges.	Hospital stewards' quarters.	Grand total.	Grand total, Philippine Islands. ²
1	National Army camps, centrally heated (4 posts):											
	Camp Chester.....	\$165,200.00	\$122,130.00	\$96,300.00	\$58,300.00	\$10,600.00	\$250.00	\$4,000.00	\$1,000.00		\$457,780.00	.....
	Camp Devens.....	178,400.00	130,000.00	105,400.00	63,000.00	14,580.00	250.00	5,000.00	1,000.00		497,630.00	.....
	Camp Funston.....	170,500.00	123,000.00	101,300.00	59,300.00	12,000.00	250.00	4,800.00	1,000.00		471,850.00	.....
	Camp Grant.....	171,300.00	128,000.00	104,000.00	62,000.00	14,000.00	250.00	4,800.00	1,000.00		485,080.00	.....
	Estimate, fiscal year 1921 (total).....	685,400.00	503,130.00	407,000.00	242,600.00	51,180.00	1,000.00	18,000.00	4,000.00		1,912,310.00	.....
	Actual cost, fiscal year 1920—											
	Total.....	1,071,147.28	874,833.00	799,057.72	251,264.00	74,264.98	149,261.00				3,070,546.98	.....
	Cash.....	448,344.96	426,647.68	575,708.20	208,775.24	74,264.98	149,261.00				1,733,741.06	.....
	Surplus material.....	622,802.32	448,185.32	223,349.52	42,488.76						1,336,805.92	.....
2	National Army camps, individually heated (12 posts):											
	Camp Dodge.....	200,000.00	127,000.00	114,500.00	76,500.00	15,500.00	250.00	5,000.00	950.00		539,700.00	.....
	Camp Gordon.....	202,000.00	128,500.00	115,500.00	77,500.00	16,500.00	250.00	5,200.00	1,000.00		548,450.00	.....
	Camp Jackson.....	210,000.00	132,500.00	120,800.00	83,000.00	20,500.00	380.00	6,000.00	1,400.00		583,580.00	.....
	Camp Lee.....	197,000.00	125,500.00	113,000.00	74,000.00	14,500.00	375.00	4,800.00	900.00		529,375.00	.....
	Camp Lewis.....	210,000.00	132,500.00	120,800.00	83,000.00	20,500.00	375.00	6,000.00	1,400.00		583,570.00	.....
	Camp Meade.....	180,000.00	121,500.00	110,500.00	72,500.00	18,500.00	325.00	3,400.00	750.00		468,325.00	.....
	Camp Pike.....	208,000.00	131,500.00	116,500.00	79,500.00	19,500.00	375.00	5,800.00	1,200.00		543,125.00	.....
	Camp Sherman.....	195,000.00	125,000.00	113,400.00	72,000.00	13,500.00	375.00	4,100.00	800.00		512,875.00	.....
	Camp Taylor.....	185,000.00	125,000.00	113,400.00	72,000.00	10,000.00	375.00	3,800.00	800.00		498,325.00	.....
	Camp Travis.....	168,000.00	128,500.00	111,300.00	70,500.00	14,500.00	375.00	3,800.00	800.00		494,875.00	.....
	Camp Upton.....	206,000.00	130,500.00	113,500.00	75,500.00	17,500.00	275.00	5,500.00	1,100.00		534,425.00	.....
	Estimate, fiscal year 1921 (total).....	2,386,000.00	1,528,000.00	1,394,000.00	915,000.00	182,000.00	3,000.00	57,000.00	12,000.00		6,477,000.00	.....
	Actual cost, fiscal year 1920—											
	Total.....	3,038,616.56	2,737,905.96	2,205,592.56	979,436.18	269,544.00	344,880.00	1,000.00	6,208.00		9,298,336.26	.....
	Cash.....	1,170,191.40	1,383,390.00	1,585,244.00	551,972.00	269,544.00	344,880.00	1,000.00	6,208.00		5,217,524.60	.....
	Surplus material.....	1,868,424.96	1,344,565.96	670,348.56	427,464.18						4,010,785.66	.....

3	Major special camps (8 posts):											
	(camp) Henning.....	385,175.00	181,000.00	167,400.00	117,400.00	25,200.00	440.00	7,400.00	2,000.00	.....	886,415.00	.....
	(camp) Abraham Vusila.....	187,400.00	72,500.00	67,120.00	46,900.00	10,080.00	175.00	2,950.00	800.00	.....	387,085.00	.....
	(camp) Humphreys.....	385,175.00	181,000.00	167,400.00	117,400.00	25,200.00	440.00	7,400.00	2,000.00	.....	886,415.00	.....
	(camp) Johnston.....	88,575.00	18,000.00	16,780.00	11,740.00	2,520.00	45.00	750.00	200.00	.....	133,610.00	.....
	(camp) Kearney.....	72,100.00	80,500.00	83,900.00	58,700.00	12,600.00	230.00	3,700.00	1,000.00	.....	322,720.00	.....
	(camp) Knox.....	385,175.00	181,000.00	167,400.00	117,400.00	25,200.00	440.00	7,400.00	2,000.00	.....	886,415.00	.....
	(camp) McJannet.....	72,100.00	80,500.00	83,900.00	58,700.00	12,600.00	230.00	3,700.00	1,000.00	.....	322,720.00	.....
	(camp) Briggs.....	72,100.00	80,500.00	83,900.00	58,700.00	12,600.00	230.00	3,700.00	1,000.00	.....	322,720.00	.....
	Estimate, fiscal year 1921 (total).....	1,647,800.00	905,000.00	889,000.00	587,000.00	126,000.00	2,200.00	37,000.00	10,000.00	.....	4,164,000.00	.....
4	Motor Transport Corps camps (3 posts):											
	Camp Holabird.....	1,657,766.48	1,126,039.98	876,802.28	678,030.09	123,978.00	421,974.00	1,000.00	500.00	.....	4,464,112.83	.....
	Camp Jessup.....	723,554.00	453,758.00	541,628.00	414,206.00	123,978.00	421,974.00	1,000.00	500.00	.....	2,458,716.00	.....
	Camp Normyle.....	994,212.48	672,277.98	335,174.28	263,732.09	.....	.....	.....	.....	.....	2,005,364.83	.....
	Estimate, fiscal year 1921 (total).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Camp Holabird.....	86,562.00	119,700.00	126,000.00	94,500.00	9,450.00	375.00	3,750.00	.....	.....	440,337.00	.....
	Camp Jessup.....	16,488.00	22,800.00	24,000.00	18,000.00	1,800.00	75.00	750.00	.....	.....	83,913.00	.....
	Camp Normyle.....	34,350.00	47,500.00	50,000.00	37,300.00	3,750.00	150.00	1,500.00	.....	.....	174,760.00	.....
	Estimate, fiscal year 1921 (total).....	127,400.00	190,000.00	200,000.00	150,000.00	15,000.00	600.00	6,000.00	.....	.....	699,000.00	.....
	Actual cost, fiscal year 1920—	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Army supply bases (6 posts):											
	Boston, Mass., Army supply base.....	187,020.00	108,000.00	88,200.00	36,000.00	.....	180.00	.....	.....	.....	419,400.00	.....
	Brooklyn, N. Y., Army supply base.....	238,970.00	138,000.00	112,700.00	46,000.00	.....	230.00	.....	.....	.....	585,900.00	.....
	Charleston, S. C., Army supply base.....	145,460.00	84,000.00	68,600.00	28,000.00	.....	140.00	.....	.....	.....	326,200.00	.....
	Norfolk, Va., Army supply base.....	238,970.00	138,000.00	112,700.00	46,000.00	.....	230.00	.....	.....	.....	585,900.00	.....
	New Orleans, La., Army supply base.....	114,200.00	66,000.00	53,900.00	22,000.00	.....	110.00	.....	.....	.....	256,300.00	.....
	Philadelphia, Pa., Army supply base.....	114,200.00	66,000.00	53,900.00	22,000.00	.....	110.00	.....	.....	.....	256,300.00	.....
	Estimate, fiscal year 1921 (total).....	1,089,000.00	600,000.00	490,000.00	200,000.00	.....	1,000.00	.....	.....	.....	2,330,000.00	.....
	Actual cost, fiscal year 1920—	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Cash.....	357,874.48	228,339.51	185,040.54	72,150.17	18,000.00	77,233.42	920.00	.....	.....	962,324.70	.....
	Surplus material.....	202,173.90	116,233.18	120,453.16	62,027.86	18,000.00	77,233.42	920.00	.....	.....	528,986.22	.....
	Estimate, fiscal year 1921 (total).....	155,700.58	112,046.33	55,587.38	10,123.19	.....	.....	.....	.....	.....	333,456.48	.....

1 Expenditures in "I. E.," fiscal year 1921, have been added in the "B. & Q." total expenditure, fiscal year 1920.

2 Includes also barracks and quarters, Philippine Islands.

ARMY APPROPRIATION BILL, 1921.

Construction Division of the Army—Summary of estimates for maintenance, repair, and operation of utilities for fiscal year 1921, showing cash expenditures for fiscal year 1920, based on actual expenditures for first half of fiscal year doubled, and the use of salvage and surplus materials—Continued.

Class.	Classes of post or station.	Barracks and quarters.	Regular supplies.	Water and sewers.	Roads, walks, wharves, and drainage.	Construction and repair of hospitals.	Incidental expenses.	Military post exchanges.	Shooting galleries and ranges.	Hospital stewards' quarters.	Grand total.	Grand total, Philippine Islands.
5	Army supply bases (6 posts)—Continued. Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	\$477,012.00 127,012.00 350,000.00	\$466,024.00 266,024.00 200,000.00	\$406,086.00 316,086.00 90,000.00	\$242,122.00 242,122.00		\$16,356.00 16,356.00				\$1,591,244.00 951,244.00 640,000.00	
6	Depots and terminals (24 posts): Estimate, fiscal year 1921 (total) Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	2,457,500.00 2,559,437.92 1,159,437.92 1,400,000.00	820,000.00 1,020,089.14 620,089.14 400,000.00	920,000.00 912,943.12 512,943.12 400,000.00	500,000.00 554,253.84 354,253.84 200,000.00		2,500.00 20,722.72 20,722.72				4,700,000.00 5,046,724.02 2,646,724.02 2,400,000.00	
7	Major hospitals (6 posts): Estimate, fiscal year 1921 (total) Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	280,000.00 37,468.07 37,468.00	120,000.00 332,540.00 282,540.00 50,000.00	120,000.00 157,092.00 127,092.00 35,000.00	9,000.00 58,900.00 58,900.00	\$1,187,000.00 1,136,676.00 978,676.00 200,000.00		\$10,000.00 23,000.00 23,000.00		\$3,000.00	1,609,000.00 1,723,076.00 1,438,076.00 285,000.00	
8	Minor hospitals (3 posts): Estimate, fiscal year 1921 (total) Actual cost, fiscal year 1920— Total..... Cash..... Surplus material.....	90,000.00 123,208.00 96,208.00 28,000.00	90,000.00 97,242.00 82,242.00 15,000.00	90,000.00 97,242.00 82,242.00 15,000.00	4,000.00 3,832.00 3,832.00	887,000.00 889,926.00 714,926.00 175,000.00		10,000.00 3,504.00 3,504.00		3,000.00	1,074,000.00 1,119,812.00 904,812.00 215,000.00	
9	Regular Army posts (137), by departments: Northwestern Department..... Eastern Department..... Southwestern Department..... Central Department..... Southern Department..... Western Department..... Estimate, fiscal year 1921 (total) Actual cost, fiscal year 1921— Total..... Cash.....	81,326.00 373,300.00 167,983.00 279,975.00 578,625.00 373,300.00 1,896,506.00 3,102,235.86 1,302,235.86	74,830.00 299,315.00 134,685.00 224,494.00 463,940.00 299,315.00 1,496,579.00 2,635,707.62 1,335,707.62	69,795.00 279,585.99 126,920.00 209,690.00 433,390.00 279,585.00 1,397,935.00 2,212,412.26 1,112,412.26	63,000.00 252,026.00 113,419.00 189,000.00 390,626.00 252,026.00 1,290,094.00 1,709,982.76 709,982.76		11,040.00 44,315.00 19,945.00 33,240.00 68,663.00 44,315.00 221,588.00 812,839.32 112,839.32	470.00 1,890.00 845.00 1,410.00 2,915.00 1,890.00 9,400.00 133,679.06 133,679.06	2,750.00 11,000.00 4,950.00 8,250.00 17,060.00 11,000.00 55,000.00 38,365.56 38,365.56	900.00 3,600.00 1,620.00 2,700.00 5,580.00 3,600.00 18,000.00 10,915.28 10,915.28	317,490.00 1,270,260.00 571,733.00 952,679.00 1,998,906.07 1,270,260.00 6,351,300.00 10,694,850.60 4,994,850.60	

10	Surplus material.....	500,000.00	300,000.00	100,000.00	1,000,000.00	400,000.00	1,000,000.00	100,000.00	1,000,000.00	5,000.00	2,000.00	5,000.00	2,000.00	900,000.00	1,800,000.00
	1919 funds.....	1,300,000.00	1,000,000.00	1,000,000.00	1,000,000.00	400,000.00	1,000,000.00	1,000,000.00	1,000,000.00	5,000.00	2,000.00	5,000.00	2,000.00	1,800,000.00	3,600,000.00
	Mexican border posts (37).....	617,000.00	270,000.00	280,000.00	300,000.00	400,000.00	1,000,000.00	1,000,000.00	1,000,000.00	5,000.00	2,000.00	5,000.00	2,000.00	1,800,000.00	3,600,000.00
	Estimate, fiscal year 1921 (total).....	684,188.66	448,888.00	448,640.00	433,150.00	110,978.00	64,570.00	28,725.00	64,570.00	5,000.00	2,000.00	5,000.00	2,000.00	2,157,689.66	4,315,379.32
	Actual cost, fiscal year 1920—	351,435.46	270,398.00	280,698.00	259,150.00	61,478.00	64,570.00	20,500.00	64,570.00	5,000.00	2,000.00	5,000.00	2,000.00	1,358,460.66	2,716,921.32
11	Cash.....	349,750.00	178,422.00	159,742.00	178,000.00	47,000.00	1,000,000.00	1,000,000.00	1,000,000.00	5,000.00	2,000.00	5,000.00	2,000.00	802,207.00	1,604,414.00
	Surplus material.....	8,575.00	10,000.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	500.00	200.00	500.00	200.00	34,125.00	68,250.00
	Minor special camps (3 posts):	8,575.00	10,000.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	500.00	200.00	500.00	200.00	34,125.00	68,250.00
	Camp Vail.....	8,575.00	10,000.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	500.00	200.00	500.00	200.00	34,125.00	68,250.00
	Camp Stanley.....	17,150.00	20,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	1,000.00	400.00	1,000.00	400.00	68,250.00	136,500.00
12	Estimate, fiscal year 1921 (total).....	34,300.00	40,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	200.00	2,000.00	200.00	2,000.00	136,500.00	273,000.00
	Actual cost, fiscal year 1920—	53,632.00	48,949.68	25,403.36	15,334.96	15,334.96	15,334.96	15,334.96	15,334.96	15,840.00	100.00	15,840.00	100.00	144,621.00	289,242.00
	Cash.....	38,683.00	35,949.68	25,403.36	15,334.96	15,334.96	15,334.96	15,334.96	15,334.96	15,840.00	100.00	15,840.00	100.00	144,621.00	289,242.00
	Surplus material.....	15,000.00	15,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	1,500.00	5,000.00	1,500.00	5,000.00	641,000.00	1,282,000.00
	Estimate, fiscal year 1921 (total).....	138,500.00	145,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,500.00	5,000.00	1,500.00	5,000.00	641,000.00	1,282,000.00
13	Actual cost, fiscal year 1920—	176,601.76	197,319.06	162,690.00	197,130.00	49,053.90	49,053.90	49,053.90	49,053.90	1,900.00	3,930.00	1,900.00	3,930.00	799,851.72	1,599,703.44
	Cash.....	76,601.76	147,319.06	127,690.00	147,130.00	39,053.90	39,053.90	39,053.90	39,053.90	1,900.00	3,930.00	1,900.00	3,930.00	554,851.72	1,109,703.44
	Surplus material.....	100,000.00	50,000.00	25,000.00	50,000.00	10,000.00	10,000.00	10,000.00	10,000.00	1,500.00	5,000.00	1,500.00	5,000.00	235,000.00	470,000.00
	Estimate, fiscal year 1921 (total).....	250,000.00	150,000.00	110,000.00	200,000.00	50,000.00	50,000.00	50,000.00	50,000.00	1,500.00	5,000.00	1,500.00	5,000.00	1,023,500.00	2,047,000.00
	Actual cost, fiscal year 1920—	240,000.00	272,704.88	165,400.00	200,000.00	68,000.00	68,000.00	68,000.00	68,000.00	90,000.00	10,000.00	90,000.00	10,000.00	1,213,104.88	2,426,209.76
14	Cash.....	190,000.00	222,704.88	165,400.00	200,000.00	68,000.00	68,000.00	68,000.00	68,000.00	90,000.00	10,000.00	90,000.00	10,000.00	1,088,104.88	2,176,209.76
	Surplus material.....	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	1,500.00	5,000.00	1,500.00	5,000.00	125,000.00	250,000.00
	Estimate, fiscal year 1921 (total).....	13,461,576.00	10,512,544.83	8,652,401.84	5,465,536.00	3,543,280.20	3,543,280.20	3,543,280.20	3,543,280.20	179,440.56	37,376.00	179,440.56	37,376.00	42,106,267.71	84,212,535.42
	Actual cost, fiscal year 1920—	5,815,685.66	5,666,987.24	5,443,200.10	3,683,728.78	2,710,780.20	2,710,780.20	2,710,780.20	2,710,780.20	70,715.56	37,376.00	70,715.56	37,376.00	23,997,605.82	47,995,211.64
	Surplus material.....	6,345,890.34	3,825,557.59	2,209,201.74	1,081,807.22	432,500.00	432,500.00	432,500.00	432,500.00	8,725.00	100,000.00	8,725.00	100,000.00	13,308,681.89	26,617,363.78
15	1919 funds.....	1,300,000.00	1,000,000.00	1,000,000.00	1,000,000.00	400,000.00	1,000,000.00	1,000,000.00	1,000,000.00	5,000.00	2,000.00	5,000.00	2,000.00	1,800,000.00	3,600,000.00
	Estimate, fiscal year 1921 (total).....	11,259,408.00	7,017,709.00	6,377,935.00	4,569,694.00	2,830,788.00	2,830,788.00	2,830,788.00	2,830,788.00	23,900.00	65,196.00	23,900.00	65,196.00	32,668,610.00	65,336,220.00
	Actual cost, fiscal year 1920—	2,262,562.00	1,119,291.00	622,065.00	131,306.00	1,425,821.00	1,425,821.00	1,425,821.00	1,425,821.00	23,900.00	65,196.00	23,900.00	65,196.00	16,086,075.00	32,172,150.00
	Surplus material.....	13,522,000.00	8,134,000.00	7,000,000.00	4,725,000.00	4,256,589.00	4,256,589.00	4,256,589.00	4,256,589.00	23,900.00	65,196.00	23,900.00	65,196.00	38,754,685.00	77,509,370.00
	Estimate, fiscal year 1921 (total).....	13,522,000.00	8,134,000.00	7,000,000.00	4,725,000.00	4,256,589.00	4,256,589.00	4,256,589.00	4,256,589.00	23,900.00	65,196.00	23,900.00	65,196.00	38,754,685.00	77,509,370.00

¹ Includes 1919 funds, R. A. posts.

² This figure includes \$500,000 for Army Medical School, Walter Reed General Hospital.

Mr. GREENE. Back of all these figures and all these estimates must be two fundamental things: The first thing is to know where the troops are going to be stationed in any considerable numbers during the next year, and that is a matter of policy for the department to determine. The second proposition that goes with that is the maintenance of those unused buildings; that is, relatively unused, that still must, for economic reasons, be kept in condition. Are not those two rather complicated propositions in arriving at a conservative estimate of cost?

Gen. MARSHALL. It is very complicated, and as I say, there is no amount included in here for any major repairs, such as the wholesale repair of roofs. These buildings, by reason of that item not being here—I presented it to the committee last year, and they cut it out wholesale—the reason it is not in here is that we were limited to the amount of the estimate, and I think I can say, without fear of successful contradiction, that the Government is going to lose a lot of money without its being here, and I want to go on record to that effect now, so that when these buildings do become unsalvageable because of that fact it will not be without the committee having the information from me to that effect.

The CHAIRMAN. Let me ask you this question. In asking for these various amounts for these cantonments have your associates in the Construction Corps made a personal inspection of the camps and can they give you a detailed statement of what is needed, or are you proceeding on a percentage basis?

Gen. MARSHALL. There is the detail of one camp [indicating]. I think there are about 60 pages or more of that. We have all that data in absolute detail, down to the number of pounds of nails and the number of screws, and we can give you any detail you want. It is just a question of what you gentlemen want submitted for your information.

The CHAIRMAN. I remember in the last hearing you told us that in the trade it was customary to write off 4½ per cent or 4 per cent per annum, and that in order to be on the safe side you, recognizing that these buildings were put up in a hurry, added about 2½ per cent more.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. I want to know whether your estimates this year were predicated on that kind of a percentage basis, or whether you had made, that is, you or your subordinates, a special inspection of all these buildings.

Gen. MARSHALL. These estimates are based on a combination of arriving at it in two ways. We have expended so much this year in caring for these places. We have an accurate account of that up to December 31. That amount has been doubled and entered as a second figure at each of these places the amount expended up to December 31 has been doubled and added there. It is the same way with materials. The amount of materials used has been ascertained and the amount expected to be used in the next six months has been ascertained and entered in the next column. The total of these two items shows the cost for the next fiscal year.

Mr. MCKENZIE. In connection with the question asked by the chairman, you could spend any amount of money on these camps that Congress might see fit to give you and spend it in a way that would be useful. Take the matter of paint. Suppose we should

say to you that you should paint these buildings. I have been told that it would take about 30,000 gallons to paint the buildings at one of the cantonments.

We are confronted with this situation. You have stated, and I agree with you, that these buildings are not worth repairing; in the second place, if they were worth repairing, Congress has not fully determined whether we are going to keep all these camps or not. Therefore, is it not the part of wisdom to only repair such buildings as will be necessary to house and care for the comparatively few men that are in these camps at the present time, perhaps from three to five thousand men in a camp, when the camp was originally built to take care of from 40,000 to 50,000 men. Would not that be the part of wisdom, and is not that what Congress should be guided by until we have a fixed and definite policy?

Gen. MARSHALL. I should certainly think so, except that I do not think it would be the part of wisdom to let these buildings to be so unprotected as to create a direct loss to the Government by their going to pieces, and that is about what we have done this year, and that is about what this cost goes into. There have been no betterments. Our instructions have been positive on that score, that none of this estimate should be for any betterments whatever, but should be only for maintaining and operating the plant in its present condition. Under the amount that is here even that can not be accomplished.

Mr. MCKENZIE. What I have in mind is this: Take one of the large camps, which would extend out 2 or 3 miles. There is a central headquarters in which, of course, the whole organization is supposed to center. My view of it would be to take care of those buildings and a sufficient number of buildings to house the men in the vicinity of this central administration building and not go way outside and put a roof on a little one-story shack.

Gen. MARSHALL. I might agree to that, but these other buildings must be looked into once and awhile to see whether there is anything loose there that will permit the weather to get in and ruin the building.

Mr. MCKENZIE. It would be to the advantage of the Government, in my view of it, if the inspector happened to find that one of them had fallen over, so that he could say, "Thank God, we do not have to bother with that any more."

The CHAIRMAN. Then could you not put boards over the windows to protect the glass?

Gen. MARSHALL. That seems a simple statement. I do not know but that that item would cost all the money in here. There are a very large number of windows.

The CHAIRMAN. It would be worth while to tear down some of the buildings and use the material for inclosing the windows.

Mr. FIELDS. Take the case of Camp Gordon. What is the appraisal value of Camp Gordon, or what would you expect to get out of it if you could salvage it?

Gen. MARSHALL. That is a very difficult question to answer offhand.

The CHAIRMAN. Or Camp Taylor?

Gen. MARSHALL. Suppose we analyze one of those things. Let us assume that Camp Gordon cost \$12,000,000. I do not know what the exact amount is, but we can take that amount for the purpose

of the argument. Of that \$12,000,000 probably \$4,000,000 is underground and in roads. The other \$8,000,000 is above ground. The material that is below ground, instead of being an asset, is a liability from the point of view of salvaging the place. Of the \$8,000,000 above ground \$4,000,000 is in labor.

The CHAIRMAN. Probably more.

Gen. MARSHALL. Probably 60 per cent in labor. For the purpose of discussion, I take it as being 50-50. Of the materials in those buildings what can you salvage? You can not salvage the wall boarding, the roofing material, or the smoke jacks. They are all gone. There is probably not more than 75 per cent of it that was originally salvageable. How much is it going to amount to?

Mr. FIELDS. That would mean \$3,000,000 salvageable.

Gen. MARSHALL. How much is it going to cost to tear the buildings down and rework the material so that it will be usable again? Take the lumber. It is cut out into odd lengths. It will probably be a million or a million and a half dollars.

Mr. FIELDS. As much as you would expect to get out of Camp Gordon if you expected to sell it for salvage?

Gen. MARSHALL. Yes.

Mr. FIELDS. If you were going to repair it and keep it up, what would it cost to keep up the repairs?

Gen. MARSHALL. Camp Gordon would be about \$500,000.

Mr. FIELDS. About half a million dollars?

Gen. MARSHALL. Yes.

Mr. FIELDS. So you would only expect to get about a million dollars if it was salvaged, but it is costing half a million dollars to repair it this year?

Gen. MARSHALL. No. That is something I had hoped to make clear. This \$500,000 includes fire prevention, maintenance, repair, and operation. The operation includes the electrical power, the water, heating, sewage disposal. The maintenance and repair item on that is about \$200,000. That is for keeping it up.

Mr. FIELDS. \$200,000. If you should salvage it you would not expect to get over a million dollars out of it?

Mr. McKENZIE. If you got a million dollars you would have a lot of stuff left that you would eventually throw away.

Gen. MARSHALL. If you sold that camp you will sell it in its entirety. On the other hand, I suppose the committee knows that we own the land on which these cantonments are constructed now, except that which is in condemnation proceedings, and we will eventually own that.

Mr. FIELDS. Did you include the price of the land?

Mr. GREENE. After all, it still gets back to the proposition as to where the troops are likely to be permanently established, and having determined that, whether you make shift and repair only temporarily what they will live in, or whether you will undertake work that will gradually lead to the supplanting of the present establishment by a permanent establishment?

Gen. MARSHALL. Yes, sir.

Mr. GREENE. And hanging to that is the enormous outlay, equally temporary, because that is going to involve tremendous losses without attention?

Gen. MARSHALL. Yes, sir. I do not know of but one way to get at that, and that would be for somebody from this committee and from the Senate committee, and somebody from the War Department to get together and come to a common understanding about it. It is awfully difficult for all of you gentlemen to attempt, each one, to go into the details and orient himself on it and go off on the proper line.

Mr. FIELDS. Of course, after we settle on a policy and decide what camps we are going to keep we must distinguish between the military value and the salvage value of a camp. We are figuring on the salvage value of Camp Gordon, which would come down to a million dollars, and it would cost \$300,000 a year to keep it in repair, which shows it should be disposed of as quickly as possible, if it is finally decided that it is not to be used for military purposes. But for military purposes it is probably worth the original cost of keeping it in repair.

Gen. MARSHALL. It has a large value because the underground part of it is all valuable if it is going to be occupied.

Mr. FIELDS. We should carefully distinguish between its salvage value and its military value?

Gen. MARSHALL. Very carefully.

The CHAIRMAN. Will you kindly run through the other items under the heading of barracks and quarters which you wish to call to the attention of the committee?

Gen. MARSHALL. I will take up the construction items, because this shows every other one of the utilities items in just the same manner as those I have just described to you, and when I say the utilities, the maintenance and repair item I should say is about 40 per cent of what is shown here, the operation and fire prevention taking up the remainder.

The CHAIRMAN. Sixty per cent?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Is any of that 60 per cent credited to labor costs?

Gen. MARSHALL. Oh, yes. Take the water supply, where we have our own water plant. We have to have firemen and engineers, and the whole operating crew in here, and also the maintenance of the water system. Of course, that does not run very much outside of the operation of the plants, but that is all included in operation. Where we purchase water from a city, that is included in operation—that is, the purchase price of the water. In these items are included water supply, electric power supply, upkeep and maintenance of water and sewer systems, etc.

The CHAIRMAN. The appropriations are on this smaller sheet?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Will you kindly explain those to the committee?

Gen. MARSHALL. Under the law the construction of any structure exceeding in cost \$20,000 is not permissible without special authority of Congress, so that we ask that the wording under "Barracks and quarters" be changed and that those special items now in the tentative draft be eliminated and you substitute the items I have enumerated on this sheet.

Construction Division of the Army—Estimate of new construction projects for fiscal year June 30, 1920, to June 30, 1921.

Name of post or station and nature of construction.	Barracks and quarters.	Regular supplies.	Water and sewers.	Roads, walks, wharves, and drainage.	Construction and repair of hospitals.	Army Medical School.	Shooting galleries and ranges.	Total.
National Army camps:								
Dodge, Des Moines, Iowa—								
Ice machine.....		\$20,000						\$20,000
Laundry.....		160,000						160,000
Lewis, American Lake, Wash., laundry.....		160,000						160,000
Meade, Admiral, Md.—								
Shooting gallery.....							\$2,000	2,000
Small-arms range.....							23,000	23,000
Pike, Little Rock, Ark., laundry.....		160,000						160,000
Special camps:								
Camp Henry Knox, Ky., laundry.....		65,000						65,000
Camp A. A. Humphreys, Va., malarial drainage.....				\$28,500				28,500
Letterman General Hospital, San Francisco, isolation wards.....					\$94,900			94,900
Walter Reed General Hospital: Two additions to main building.....								
Group for nervous and insane patients.....								
Army Medical School.....						\$500,000		500,000
Mobile Army posts:								
Alcatraz Island, Calif.—								
Shop for Salvage Service.....	\$35,000							35,000
Water system.....			\$160,000					160,000
Fort Leavenworth, Kans., (including Disciplinary Barracks)—								
Motor Transport shops.....	230,000	90,000	30,000	54,256				404,256
Swimming pool.....	22,000	5,100	5,600					32,700
Officers' quarters.....	531,462	83,400	112,600					727,462
Noncommissioned officers' quarters.....	328,300	29,400	17,300					375,000
Fort Niagara, water system.....			30,000					30,000
Plattsburgh Barracks, incinerator.....			8,000					8,000
Fort Snelling, Minn., incinerator.....			8,000					8,000
Fort Slocum—								
Bakery.....		18,925						18,925
Laundry.....		44,950						44,950
Wharf.....				48,550				48,550
Washington Barracks, officers' quarters.....	1,050,000	215,000	85,000					1,350,000
Camps—								
Beacon, temporary quarters.....	37,050	6,800	1,250					45,100
El Campo, temporary quarters.....	5,650	1,590	503					7,743
Hearn, temporary quarters.....	23,130	6,806	3,812					33,838
Schofield barracks, ice machine.....		52,230						52,230
Honolulu, Ford's Island water supply.....			160,000					160,000
Grand total.....	2,262,592	1,119,391	622,065	131,306	1,425,821	500,000	25,000	6,086,075

ESTIMATES FOR FISCAL YEAR 1921—WORDING AS MODIFIED ON MARCH 27, 1920.

It is requested that the following changes be made in the wording of the various appropriations as they appear in the Book of Estimates:

In appropriation "Barracks and quarters," after the sentence "Provided, That not to exceed the following sums may be used in the erection and completion of buildings enumerated at the places named," omit the remainder of wording and substitute the following: \$35,000 for a shop for salvage service at Alcatraz Island, Calif.; \$404,256 for motor training school buildings at Fort Leavenworth, Kans.; \$32,700 for a swimming pool at United States Disciplinary Barracks, Fort Leavenworth, Kans.; \$727,462 for officers' quarters to accommodate 50 officers' families at Fort Leavenworth, Kans.; \$375,000 for noncommissioned officers' quarters to accommo-

date 50 families at Fort Leavenworth, Kans.; \$1,350,000 for officers' quarters to accommodate 96 families at Army Staff College, Washington Barracks, D. C.; \$45,100 for temporary barrack building and officers' quarters at Camp Beacon, Calif.; \$33,838 for temporary barrack building and officers' quarters at Camp Hearn, Calif. (act July 11, 1919, vol. 41, p. 118, sec. 1).

In appropriation "Regular supplies," after the sentence "Provided, That not to exceed the following sums may be used in the erection and completion of buildings enumerated at the places named," omit the remainder of wording and substitute the following: \$20,000 for an ice and cold storage plant at Camp Dodge, Iowa; \$160,000 for a laundry at Camp Dodge, Iowa; \$160,000 for a laundry at Camp Lewis, Wash.; \$160,000 for a laundry at Camp Pike, Ark.; \$65,000 for a laundry at Camp Knox, Ky.; \$44,950 for a laundry at Fort Slocum, N. Y.; \$52,230 for an ice and cold storage plant at Schofield Barracks (act July 11, 1919, vol. 41, p. 114, sec. 1).

In appropriation "Water and sewers," after the phrase "filtration plant at Fort Niagara, N. Y.," omit the remainder of the wording and substitute the following: \$160,000 for a water supply system at Fort Leavenworth, Kans. (act July 11, 1919, vol. 41, p. 117, sec. 1).

In appropriation "Roads, walks, wharves, and drainage," after the sentence "Provided, That not to exceed the following sums may be used in the erection and completion of the structures named," omit the remainder of the wording and substitute the following: \$100 for the purchase of land near terminal of bridge at Deer Island, Boston Harbor, Mass.; \$28,500 for malarial drainage at Camp Humphreys, Va.; \$48,550 for rebuilding of wharf at Fort Slocum, N. Y. (act July 11, 1919, vol. 41, p. 119, sec. 1).

In appropriation "Construction and repair of hospitals," after the sentence "Provided, That of this amount not to exceed the following sums may be used in the erection and completion of buildings, structures, or systems enumerated as follows," omit all items enumerated and substitute the following: \$94,900 for isolation wards at Letterman General Hospital; \$932,646 for two additions to main building at Walter Reed General Hospital; \$398,275 for a group of buildings for nervous and insane patients at Walter Reed General Hospital; \$75,000 for alterations to buildings at Camp Holabird to convert same into a hospital; \$85,000 for completion of hospital buildings at Camp Knox, Ky. (act July 11, 1919, vol. 41, p. 119, sec. 1).

In appropriation "Shooting galleries and ranges," add: "Provided, That not to exceed \$23,000 may be used in the erection and completion of a shooting gallery and small arms range for Tank Corps at Camp Meade, Md." (act July 11, 1919, vol. 41, p. 119, sec. 1).

CAMP DODGE ICE PLANT, \$20,000.

1. Ice supply for Camp Dodge is purchased locally. During July and August, 1919, the largest artificial ice manufacturers in the vicinity refused to bid to supply ice to the camp as their output was entirely consumed in towns where they were located. During August it was necessary to use 50 per cent river ice to supply the camp.

2. The amounts required were:

	Cost.
May, 1919, 250,000 pounds	\$972. 24
June, 1919, 500,000 pounds	1, 494. 98
July, 1919, 678,500 pounds	2, 116. 64

Total, 1,428,500 pounds	4, 584. 86
Cost per ton	6. 42

3. The ice plant will be run in connection with present cold-storage plant, and therefore will require employment of only two additional men as ice pullers, at 45 cents per hour, or \$2,352 per year. The only other cost will be for water and electric current. The cost of production will, therefore, be approximately \$2.50 per ton. (Output of plant 2,000 tons per year.)

4. The consumption of ice per year at Camp Dodge is approximately 2,000 tons.	
Cost per ton, purchased	\$6. 42
Cost per ton, manufactured	2. 50

Saving per ton	3. 92
Saving per year (2,000 tons)	7, 840. 00

In three years this plant will have more than paid for its initial cost.

5. The amount requested herewith will build an addition to the present cold-storage building approximately 30 by 100 feet, thus furnishing the space required for the installation of the ice-making machinery.

ARMY APPROPRIATION BILL, 1921.

CAMP DODGE LAUNDRY, \$160,000.

1. Camp Dodge is one of the three National Army camps remaining without post laundry.

2. Officers and soldiers here must send their laundry to Des Moines, 12 miles distant. This alone renders service very unsatisfactory. In addition the quality of the work is not good and the prices excessive. The hardship on the enlisted men is especially great as they can not afford to pay the prices of the regular laundries and must either get their work done by a washerwoman 12 miles away or do a makeshift job themselves. A post laundry would render highly satisfactory service at a cost price which means a saving of inestimable benefit to both officers and men. At a Government laundry each enlisted man is charged \$1 a month, and for that sum his entire laundry was called for, done, and delivered each week. Officers pay according to the number of pieces at a cost price. The work is very satisfactory.

3. Sanitary inspectors have frequently reported places where laundry is done at present as unsanitary and dangerous to the health of troops as often being the means of introducing disease.

4. The saving which a post laundry would effect on Government laundry alone (hospital laundry, blankets, clothing, and equipment turned in by enlisted men, etc.), is sufficient to warrant constructing one. It is impossible to determine the exact amount saved to the Government on renovated soldiers' clothing which is made available for reissue by the laundry. Nor can the saving effected because of the ample and approved means of sterilizing bedding and clothing provided by a laundry be determined. But we can determine by comparison what actual savings on laundering may be expected. The Camp Dix laundry, of 20,000 man capacity, had the following record for fiscal year 1918-19:

Total earnings.....	\$354, 516. 04
Total operating cost.....	168, 122. 68

Net profit.....	186, 393. 36
Original cost of plant.....	125, 405. 08

Balance.....	60, 988. 28
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That is, in one year the plant paid all operating expenses and earned sufficient surplus to pay the entire initial cost and leave a balance of \$60,988.28.

The work done was:

Pieces of work for officers and men.....	867, 741
Pieces of Government work.....	6, 968, 400

Total number of pieces.....	7, 836, 141
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Actual cost of Government work.....	\$331, 530. 91
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Estimated cost of this same work if done by commercial contract at average contract rate, based on contracts actually in effect.....	801, 138. 53
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Showing a saving of.....	469, 607. 62
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Thus the Government saved outright on its Camp Dix laundry bill approximately.....	469, 607. 62
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Add to this the net profit of the laundry which was available for other use.	186, 393. 36
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Showing an actual saving for 1 year of.....	656, 000. 98
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This saving was effected by an original expenditure by the Government of.....	125, 405. 08
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Making the actual cash saved to the Government over all expenses of.....	530, 595. 90
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It is to be borne in mind that for the second year of operation the savings will be greater by the original cost of the plant (in this case \$125,405.08), as the plant is fully paid for during the first year, as shown above.

5. In connection with these savings on one single laundry attention is called to the fact that, calculated upon what it would have cost the Government to have its work done by commercial contract at the average contract rate based upon contracts actually in effect, all the Government laundries in the country saved during the fiscal year 1918-19 enough money to pay all operating expenses, pay the value of all plants

and equipment, and leave a surplus of \$2,364,338.63. The sound business wisdom of establishing Government laundries at posts having any considerable quantity of work can not be questioned. Camp Dodge is the home station of the Fourth Division and has a volume of laundry more than sufficient to make a post laundry a paying project.

GOVERNMENT LAUNDRIES.

1. Government laundries effected the following savings to the Government during the fiscal year 1918-19. All figures are furnished by the Office of the Quartermaster General, Director of Purchase and Storage.

Number of pieces washed in Government laundries.....	113, 256, 293
Number of pieces of above volume which was Government work, i. e. hospital linen, clothing and equipage turned in by enlisted men, etc.....	75, 285, 102
Number of pieces of officers' and soldiers' work from which outside revenue was derived.....	37, 971, 191
Total cost of operation.....	\$3, 315, 153. 83
Revenue from officers' and enlisted men's work.....	1, 812, 362. 84

Net cost to Government for all Government work.....	1, 502, 790. 99
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Had the 75,285,102 pieces of Government work been accomplished by commercial contract, at the average contract rate, based upon contracts actually in effect, the cost to the Government would have amounted to.....	7, 775, 632. 02
Actual cost of this Government work.....	1, 502, 790. 99

Amount saved to the Government.....	6, 272, 841. 03
Estimated value of all Government laundry buildings, machinery and power plants on July 1, 1918.....	3, 908, 502. 40

Difference.....	2, 364, 338. 63
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2. Showing that in one year the Government laundries now in operation did all Government work at a cost which shows a saving over the same volume of work done by private contract sufficient to pay for themselves and leave \$2,364,338.63 over. The saving to officers and enlisted men on their laundry is equally great. In connection with these savings it must be remembered that Government laundries do in general much more satisfactory work than others.

3. The following comparison of the cost to the Government of the laundry from the hospitals at the following camps when done by commercial contract and when done by the post laundry after its erection is apropos:

Camp Devens:	
By commercial contract for 3 months.....	\$14, 693. 23
By post laundry for 3 months.....	7, 547. 10

Savings of.....	7, 146. 13
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Or a saving of 47.95 per cent.

Camp Holabird:	
By commercial contract for 4 months.....	432. 87
By post laundry for 4 months.....	249. 97

Savings of.....	182. 90
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Or a saving of 42 per cent.

Camp A. A. Humphreys:	
By commercial contract for 3 months.....	5, 422. 61
By post laundry for 3 months.....	1, 500. 55

Savings of.....	3, 922. 06
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Or a saving of 72 per cent.

4. The average saved to the Government by a post laundry on the bill for hospital laundry alone at these three camps is 53.98 per cent. Hospital laundry is only a part of the total Government laundry on which a like saving was effected.

CAMP LEWIS LAUNDRY, \$160,000.

1. Camp Lewis is one of the three National Army camps remaining without a post laundry.

2. All laundry from this camp must be sent 19 miles to Tacoma. This in itself renders service unsatisfactory, and the work, as at all other places under similar conditions, is not good. The greatest trouble being the enormous shrinkage of the woollen clothing and underwear issued to soldiers because it is not properly washed. Prices are excessive. The enlisted men especially having trouble because they can not afford to pay the prices of the regular laundry, and they can not get washerwomen because of the distance to the city. A post laundry would overcome all these difficulties, and at an enormous saving to both the officers, men, and the Government.

3. Reports of sanitary inspectors here, as at the other camps so situated, have frequently recorded places where laundry is done as insanitary and dangerous to the health of the troops, as being the means of introducing disease.

4. The savings which a post laundry would effect on Government laundry alone (hospital laundry work, blankets, clothing, and equipment turned in by enlisted men, etc.) would be so great that the Government can not afford to allow the present situation to continue. The savings on renovated soldiers' clothing, which by this means is made available for reissue, and on the means provided by the laundry for sterilizing bedding and clothing have been mentioned in connection with the request for a laundry at Camp Dodge. The data given in connection with the Camp Dix laundry is repeated here as it is the only laundry of the same capacity as the proposed laundry for this camp, for which data is available:

Fiscal year 1918-19:

Total earnings.....	\$354, 516. 04
Total operating cost.....	168, 122. 68

New profit.....	186, 393. 36
Original cost of plant.....	125, 405. 08

Balance.....	60, 988. 28
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That is, in one year the plant paid all operating expenses and earned sufficient surplus to pay the entire initial cost and leave a balance of \$60,988.28.

The work done was:

Pieces of work for officers and men.....	867, 741
Pieces of Government work.....	6, 968, 400

Total number of pieces.....	7, 836, 141
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Actual cost of Government work.....	\$331, 530. 91
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Estimated cost of this same work if done by commercial contract at average contract rate, based on contracts actually in effect.....	801, 138. 53
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Showing a saving of.....	469, 607. 62
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Thus the Government saved outright on its Camp Dix laundry bill approximately.....	469, 607. 62
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Add to this the net profit of the laundry which was available for other use.....	186, 393. 36
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Showing an actual saving for one year of.....	656, 000. 98
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This saving was effected by an original expenditure by the Government of.....	125, 405. 08
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Making the actual cash saved to the Government over all expenses.....	530, 595. 90
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It is to be borne in mind that for the second year of operation the savings will be greater by the original cost of the plant (in this case \$125,405.08) as the plant is fully paid for during the first year, as shown above.

5. Attention is again called to the fact that calculated upon what it would have cost the Government to have its work done by commercial contract at the average contract rate, based upon contracts actually in effect, all the Government laundries in the country saved during the fiscal year 1918-19 enough money to pay all operating expenses, pay the value of all plants and equipment, and leave a surplus of \$2,364,338.63.

CAMP MEADE SHOOTING GALLERY, \$2,000, AND CAMP MEADE TARGET RANGE, \$23,000.

1. The following letter from the Chief of the Tank Corps will explain the necessity for this construction:

SEPTEMBER 9, 1919.

From: Chief of Tank Corps.

To: Chief of Construction Division (attention, Col. Hartman), Building C, Seventh and B Streets, Washington, D. C.

Subject: Estimate offunds for shooting galleries and ranges for fiscal year ending June 30, 1921.

1. In submitting your estimate for the Construction Division for funds for the fiscal year ending June 30, 1921, will you please include under the items of "Shooting galleries and ranges" the following for the Tank Corps?

"For the construction, operation, and maintenance of firing ranges and shooting galleries for use of Tank Corps troops..... \$25,000

2. It is necessary that firing ranges with proper driving courses be constructed for the use of all guns used in light and heavy tanks. For the technical employment and training of Tank Corps units it is not only essential that diversified terrain be provided, but it is also imperative that battle practice be held. This practice involves not only the firing of machine guns, but also that of the 37-millimeter, 6-pounder, and possibly heavier types, while the tanks are in motion—a procedure which gives a much wider dispersion than when the guns are fired from a tank not in motion. This, in turn, requires a firing range especially and carefully constructed for such work in order to avoid danger to inhabitants of the surrounding neighborhood.

3. The proper development of the tanks as a fighting machine necessitates unrestricted operations and tests, and the amount required for this purpose is considered a minimum. This estimate is also intended to cover the construction, operation, and maintenance of the necessary driving courses for Tank Corps units. These courses are an integral part of the firing range proper, and it will be necessary to use them when undergoing battle practice.

4. The shooting galleries are very necessary for winter practice.

ROBERT L. COLLINS,
Colonel of Cavalry, Executive Officer.

For and in the absence of:

S. D. ROCKENBACH,
Brigadier General, United States Army, Chief of Tank Corps.

CAMP PIKE LAUNDRY, \$160,000.

1. Camp Pike is the third of the National Army camps remaining without a post laundry.

2. The nearest town having facilities for doing laundry in quantities is Little Rock, 8 miles distant from the camp. Prices are excessive, the work is not good, especially on woolens. This, together with the distance from the camp, renders the services extremely unsatisfactory. Here, as at Camps Dodge and Lewis, the enlisted men who can not afford to pay the prices charged by the regular laundries must depend on washerwomen to a large extent. The very fact that so many men must attempt to get their work done by such means and at a distance of 8 miles from their station makes the laundry one of the greatest disadvantages in the connection with the life in the camp. A post laundry would overcome all these defects and effect the same savings mentioned in our memoranda on Camps Dodge and Lewis.

3. Similar reports from sanitary inspectors have been received in connection with places where laundry is done in Little Rock as in Des Moines and Takoma. Wherever it is necessary to send laundry from a large number of men to washerwomen there will always be some who are uncleanly and who will frequently have diseases present in their homes.

4. Mention has been made in memoranda on Camps Dodge and Lewis to the savings which would be realized on renovated soldiers' clothing, on sterilized bedding and clothing. Data has been given for the Camp Dix laundry which shows the savings to the Government over the running expenses of \$656,000.98 for one year, or a saving in one year over the running expenses, plus the initial cost of plant and equipment of \$539,595.90. This saving is on the sum it would have cost the Government to have its own work done if this had been done by commercial contract at the average contract rate based on contracts actually in effect.

5. Data is given herewith for the laundry at Camp Meade, Md., for the fiscal year 1918-19. This plant is of 40,000-man capacity and will serve for comparison with the savings effected on the 20,000-man capacity plant at Camp Dix.

Total earnings.....	\$658,061.17
Total operating cost.....	378,075.71

Net profit.....	279,985.46
Original cost of plant.....	234,980.37

Balance.....	45,005.09
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That is, in one year this plant paid all operating expenses and earned sufficient surplus to pay the entire initial cost and leave a balance of \$45,005.09.

The work done was:

Pieces of work for officers and men.....	5,244,928
Pieces of Government work.....	4,415,124

Total number of pieces.....	9,660,052
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Actual cost of Government work.....	\$355,677.55
Estimated cost of this work if done by commercial contract at average contract rate, based on contracts actually in effect.....	502,251.01

Showing a saving of.....	146,573.46
This saving plus the net profit of.....	279,985.46

Makes a total actual saving to the Government for 1 year.....	426,558.92
This saving is effected by an original expenditure by the Government of.....	234,980.37

Making an actual cost saved over all expenses, plus initial cost of..	191,578.55
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It is to be expected that a saving in this case would be much less than in a case of the Camp Dix laundry, for here we have a plant whose original cost was almost double that of the Camp Dix, whose operating expense is more than double that of Camp Dix, but its volume of work was only 23 per cent greater.

6. Attention is also called to the fact that all Government laundries in the country during the fiscal year 1918-19 saved a sum sufficient to pay all operating expenses, pay the initial value of all plants and equipment and leave \$2,364,338.63 over. This saving is based on what it would have cost the Government to have its work done by commercial contract, based upon contracts actually in effect. These figures demonstrate beyond any doubt the sound business wisdom of establishing Government laundries at every post where the volume of the work warrants it. The present garrison of Camp Pike, which is the station of the Third Division, does provide a quantity of work more than sufficient to warrant the construction requested.

7. In a letter under date of February 8, 1920, the camp hospital at Camp Pike was notified by the Frank's Laundry Co., Little Rock, Ark., that the following increase in prices would take effect immediately: Sheets increased from 3 cents to 4 cents each; slips, increased from 2½ cents to 3 cents each; pajama coats increased from 7½ cents to 9 cents each; pajama pants increased from 7½ cents to 9 cents each; overalls increased from 35 cents to 45 cents each.

The average increase in prices on these articles, which constitute the vast majority of the hospital laundry work, is 26 per cent. A circular has been sent by the hospital to various laundries in an effort to secure competition in this work without avail. During November and December, 1919, and January, 1920, the laundry bill of the hospital was \$5,105.84, or an average bill for the year of \$20,423.36. The increase of 26 per cent just made by the laundry will make this cost the Government \$5,310.07 more during the coming year, or a total of \$25,733.43. At present the Government is helpless and can not escape this unwarranted expenditure. The Government must erect a post laundry as a matter of self-protection.

CAMP KNOX LAUNDRY, \$65,000.

1. Camp Knox is being developed as a Field Artillery brigade firing center, and is to be one of the special Regular Army posts. It has no laundry. The nearest facilities for doing laundry of the volume required by the garrison of this camp are located at Camp Zachary Taylor, 31 miles distant. It has been necessary to transport all of the laundry from the camp to and from Camp Taylor every week by truck. The roads over which this must be taken are in very bad condition even in good weather. During prolonged rains they become almost impassable. The question of a laundry has always been one of the greatest inconveniences of living at Camp Knox, and one of the sorest spots in the life of the troops stationed there. It is believed that everything

which can be done that does not involve too great an outlay of money, and that will tend to better conditions of life in camp, should be done. From this point of view alone, the expenditure requested herewith is considered advisable.

2. The necessity for a laundry at this camp arises from three principal points:

(a) The great distance separating Camp Knox from Camp Taylor, with consequent delay in transit.

(b) The impossibility for individuals to rectify mistakes that may be made in returned laundry because of this distance.

(c) The fact that the laundry at Camp Taylor must first care for the local garrison and, if time is available after that, it will then do the work for Camp Knox.

As the units of the First Division gradually recruit up to their normal strength, the garrison of Camp Taylor will be so large that it will require the entire facilities of the laundry there to do the local work. In the event that Camp Knox is given no local laundry they would then be forced to revert to the old system of sending their laundry to commercial firms in Louisville with all the accompanying inconveniences, and excessive expense, which have been noted in connection with the laundries at Camps Dodge, Pike, and Lewis. It is only just and wise that two communities the size of Camps Taylor and Knox should each have its own facilities for doing laundry.

3. The enormous savings to the Government effected by a post laundry have been demonstrated in memorandums on the three National Army camps, Lewis, Dodge, and Pike. It is not necessary that the figures given there be quoted again. The fact that all of the Government laundries in the country saved during the fiscal year 1918-19 enough money to pay all operating expenses, pay the initial value of all plants, and equipment, and leave a surplus of \$2,346,338.63, these savings based upon what it would have cost the Government to have its work done by commercial contract at the average contract rate, based upon contracts actually in effect, demonstrates beyond the possibility of a doubt the sound business wisdom of establishing a Government laundry at every post where the volume of the work warrants it. Camp Knox will have a capacity of three brigades of Artillery, and it is intended to keep three brigades there. This means that Camp Knox is a community of from twelve to fifteen thousand men, which number will be increased as quarters are made available and officers and men have their families join them there. Such a community will provide sufficient laundry to more than justify this construction.

CAMP A. A. HUMPHREYS, VA., MALARIAL DRAINAGE (R. W. W. & D.), \$28,000.

1. Camp Humphreys is situated in a vicinity that has long been known as one in which the anopheles mosquitoes abound. This insect breeds to such an extent that a large number of the inhabitants are infected with malaria. Other mosquito-borne diseases are quite common among the inhabitants. The only method by which these diseases may be stamped out is the extermination of the mosquitoes.

2. Camp Humphreys is to be retained permanently by the War Department for the location of the engineers' school. This being so, it becomes imperative that the camp be made a healthy place in which to live. Sanitary and malarial drainage must be undertaken at the earliest possible date, as the only successful means whereby the anopheles and other mosquitoes may be exterminated is by proper drainage of swamp areas. Until the breeding places of these mosquitoes near Camp Humphreys are so drained the troops quartered in the camp will be constantly exposed to malaria and other mosquito-borne diseases.

3. The appropriation requested herewith is extremely urgent and will result in a very considerable savings to the Government in expense for oiling and ditching which is now necessary. During the year 1919 there were only four cases of malaria contracted at the camp, due to the very extensive preventive measures taken. The cost of these measures to the Government for this year is as follows:

Month.	Labor cost.	Oil cost.	Larvacide.	Total.
May.....	(1)	\$171.80	.....	\$171.80
June.....	(1)	343.75	.....	343.75
July.....	(1)	343.75	.....	343.75
August.....	\$776.15	378.05	\$313.50	1,467.70
September.....	1,552.30	412.50	627.00	2,591.80
October.....	1,552.30	412.50	627.00	2,591.80
November.....	.....	.....	.....	.....
December.....	.....	.....	.....	.....
Total.....	3,880.75	2,062.35	1,567.50	7,510.60

¹ Estimated.

It is to be noticed that during May, June, July, and the first half of August, when enlisted men were employed whose salaries could not be determined, the cost is comparatively low. However, beginning with August 15, there were no enlisted men available for this work, and civilians were employed exclusively. An average force of 15 laborers and 1 foreman was used from August 15 until October 31, rate of pay 45 cents per hour for laborers and 60 cents per hour for foreman. The services of this gang during these two and one-half months, plus the cost of the oil and larvacide which was used, cost the Government \$6,651.30, or an average of \$2,660.52 per month. Because of the fact that no enlisted men will be available for this work during the coming summer it will be necessary to employ a gang of approximately this same size through the entire coming season, which is six months long, from May to October, inclusive. The total cost to the Government of this work; that is for labor and materials, at the monthly average of \$2,660.52, will be \$15,963.12, and after spending this money there is no permanent betterment whatever, the only thing gained being freedom from malaria for the one year. If the money requested herewith is granted it will be possible to make such permanent improvements as will render Camp Humphreys free from mosquitoes. In view of the fact that Camp Humphreys is to be a permanent post, and that the Government will spend in two years in temporary preventive measures considerably more than the amount which is necessary to render Camp Humphreys free from mosquitoes, there is no other course but to provide this money at this time.

LETTERMAN GENERAL HOSPITAL, ISOLATION WARDS (C. & R. OF H.). \$94,900.

1. It is proposed to construct three isolation wards at the Letterman General Hospital to house wards which are at present located in temporary buildings (see blue print), 100 by 150 feet U-shaped, concrete, two stories and basement.

2. The isolation wards of the Letterman General Hospital are located in temporary buildings which were erected during the emergency. They are situated in very close contact with each other in the central group of the hospital. Because of their temporary nature they are already in an unsatisfactory condition due to wear and tear. The upkeep expense is very high. Because of their location and the nature of construction they also involve a very serious fire hazard for themselves and for the entire hospital.

3. Due to the increased number of patients because of the war it will be impossible to house these wards in any existing permanent buildings. It is desired to erect permanent buildings for housing all the isolation wards, which will conform in architecture and type of construction to the present buildings of the hospital.

4. From the point of view of fire menace to the entire hospital, which the group of temporary buildings now there present, it is considered extremely desirable that they be razed. To do this it is absolutely necessary that the buildings requested herewith be authorized. From the point of view of the conditions required for housing the isolation wards, it must be borne in mind that the present temporary buildings will within a few years be unfit for such use, making the erection of permanent buildings an absolute necessity. Because of the unsatisfactory condition, even at present, and of the high maintenance cost, it is essential that they be constructed at once.

5. The Letterman General Hospital was first authorized in an appropriation in 1899, which provided quarters for officers and men, wards for patients, storehouses, etc., at a cost of \$61,553.62. Since that time, excepting only in 1905 and 1910, Congress has appropriated every year money for the enlargement and improvement of the Letterman General Hospital, varying in amounts from \$9,741 to \$87,363, and averaging \$41,546.68. There is included in this amount the permanent construction only. All temporary construction (which consisted of 27 buildings at a total cost of \$143,851.88) is omitted from the above figures. The permanent construction at this hospital consists of 51 buildings with a capacity of 620 beds, which represents an investment of \$789,387.08.

6. The erection of these isolation wards represents the normal yearly development of this hospital. Congress has appropriated for this development, as shown above, an average of \$41,546.68 a year. Taking into consideration the fact that the cost of material and labor has practically doubled, the cost of construction during the last two years, it is seen that the amount requested is exactly in accordance with the established policy of Congress with respect to this general hospital.

WALTER REED GENERAL HOSPITAL, ADDITIONS TO MAIN HOSPITAL BUILDING (C. & R. OF H.), \$932,646.

1. It is proposed, in carrying out the plan for the gradual development of Walter Reed General Hospital into one of the main hospitals of the Army, to erect two additions to the main hospital building. They are, therefore, to be considered part of the larger plan of the ultimate development of Walter Reed as an Army medical center. The additions are to be in keeping with the present modest permanent construction, and are to accommodate the following activities: (1) medical and surgical wards, (2) receiving department and storage of patients effects, (3) surgical suite, (4) dental (X-ray and laboratory) department, (5) dispensary, (6) eye, ear, nose, and throat department, (7) laboratory. At present all these activities, excepting only the surgical suite are housed in temporary buildings. The maintenance expense of these buildings is already very high and will be constantly increasing. In addition these buildings will unavoidably as time passes become more or less disreputable, and it is necessary if a satisfactory hospital is to be maintained at the Capital that they be replaced by permanent buildings. The temporary buildings are not satisfactory for treating the sick, and should be abandoned and cleared from the landscape to improve conditions and reduce the fire hazard.

2. The surgical suite at present located in the main building is occupying quarters poorly suited to it, and of insufficient space. It is considered very necessary that modern facilities and sufficient space be furnished to this department.

3. Because of the location of Walter Reed General Hospital at the Nation's Capital and because of the congested and haphazard grouping of the temporary building there, it is considered necessary to begin at once the removal of these buildings and the housing of activities in permanent structures. It is utterly impossible to remove any of these temporary buildings unless new permanent buildings are provided to house their activities.

4. Since its original authorization by Congress in 1908 the Walter Reed General Hospital received an average of \$72,368.39 each year up to and including 1915. Since that time the plans for the hospital have changed and it is now planned to make this one of the principal medical centers of the Army, thus the future plans for the Walter Reed General Hospital are on a larger scale than during the years before 1915. Up to that time only 12 permanent buildings, with a capacity of 165 beds have been erected, at a cost to the Government of \$506,578.73. This permanent construction represents an exceedingly small hospital plant.

5. In carrying out the plans of the Surgeon General of the Army, which are approved by the Secretary of War, Congress took the first and essential step in appropriating an item of \$350,000 for the purchase of the necessary land. The next step in developing the permanent plant of the Walter Reed Hospital is the construction of the additions to the main hospital building, requested herewith. These buildings are planned to take their place in the ultimate hospital. Because of the unsightly appearance of the temporary buildings, of their great fire hazard, of the extremely high cost of upkeep which increases greatly each year, and of the fact that they are not satisfactory buildings in which to treat the sick, the additions requested herewith are necessary immediately.

WALTER REED GENERAL HOSPITAL, WARDS FOR NERVOUS AND MENTAL PATIENTS (C. & R. OF H.), \$398,275.

1. It is proposed to erect five 30-bed wards, one administration building, and one mess hall to house all nervous, mental, and insane patients and to care for all apparatus required in their treatment. In the past the treatment of these patients in the Army has not been satisfactory. It is the duty of the Surgeon General to provide the best facilities possible for the treatment of these cases, and this requires that such treatment be given in a more approved manner in the future than it has been in the past. Even before the war there was grave necessity for improvement in the means and method of treatment of these cases, and the great advance made during the war with reference to this treatment in the Army has rendered still more imperative the necessity for improving the treating of these cases. The present state of our enlightenment (and this enlightenment will increase) makes it absolutely imperative that some improvements be made in the treatment of these nervous, mental, and insane patients in the military service.

2. This question has been thoroughly investigated in the office of the Surgeon General, and many conferences have been held with leading specialists in this work, and while the construction proposed is not ideal, it is hoped that with this amount of money to erect a group of buildings on the grounds at Walter Reed Hospital slightly

set apart from the general mass of patients, where modern treatment may be carried on in a manner more acceptable to our present enlightenment. No definite plan has been adopted, four or five being under consideration.

3. The Walter Reed General Hospital was first authorized by Congress in 1908 in an appropriation of \$210,767 for the construction of one hospital building, 65 beds capacity, and one double noncommissioned officers' quarters. Following that Congress appropriated money for the improvement and development of the Walter Reed General Hospital every year, except only 1912, up to and including 1915, the amount varying from \$11,489 in 1909 to \$126,079 in 1910. The average appropriation for this hospital has been \$72,386.39, this being for permanent construction only, and the total investment in the permanent construction, which consists of 12 buildings with a capacity of 165 beds, is \$506,587.73.

4. It is the plan of the Surgeon General of the Army to develop the Walter Reed General Hospital as one of the principal medical centers of the Army. The present permanent construction at the hospital represents an investment of over a half million dollars. On July 20, 1919, Congress appropriated an item of \$350,000 for the purchase of approximately 26.9 acres of additional land at this hospital to provide space necessary for the normal enlargement and development of it, according to the Surgeon General's plans. The wards for nervous and mental patients requested herewith are not to be thought of as being for this hospital alone, but for the use of the entire Army. It is to provide proper facilities for treating such cases to the whole Army that these buildings are necessary.

WALTER REED GENERAL HOSPITAL, ARMY MEDICAL SCHOOL, \$500,000.

1. Attention is invited to the following extract from a letter from the Surgeon General of the Army to the Chief of Staff on March 22, 1919:

"4. As indicated by letter of this office dated January 29, 1919, which was published in full in the House document above cited (H. Doc. No. 1766, 65th Cong., 3d sess.), it is the ultimate desire to develop the Walter Reed General Hospital into one of the chief medical centers of the Army, at a total cost of approximately \$10,000,000. The time is probably not now opportune to seek so large an appropriation for the development of the entire scheme. I think, however, that some steps toward it should be inaugurated at as early a date as practicable, and that the first step should be toward the erection of a building on the grounds of the hospital for the use of the Army Medical School, which now occupies rented buildings in the city at an annual rental of \$19,980, which are so far removed from the hospital as to make the clinical advantages thereof substantially inaccessible.

"5. I recommend, therefore, that Congress be asked at the approaching session to include an additional item in the Army appropriation bill in connection with the item above quoted to provide for the construction of a building for the school in some such terms as these:

"For the construction on the grounds of the Walter Reed General Hospital, in the District of Columbia, or any extension thereof, including in the discretion of the Secretary of War, the employment of professional and technical experts in architecture, without regard to civil-service rules and regulations, of such buildings, with modern improvements, as may in his judgment be necessary and suitable for the use of the Army Medical School, \$2,200,000."

"M. V. IRELAND,
"Surgeon General, United States Army."

2. The estimate of \$2,200,000 for the Army Medical School may be subdivided as follows:

Construction.....	\$1,540,000
Plumbing.....	154,000
Heating.....	198,000
Mechanical equipment.....	110,000
Lighting.....	88,000
Roads and walks.....	110,000

3. A copy of the letter of the Surgeon General, dated January 29, 1919, referred to in paragraph 4 of letter quoted above, is attached hereto for your information.

4. Under date of September 10, 1919, the Surgeon General, in a letter to the chief of the Construction Division, requested that an item of \$2,200,000 for the new Army medical school at Walter Reed General Hospital be incorporated in the estimates for 1921 as a special item. This request was approved by the Secretary of War in second

indorsement, dated September 24, 1919, to the chief of the Construction Division. The item for this year has since been cut to its present amount.

5. It will be noted that the entire sum needed to construct the Army medical school is not requested at this time, but only \$500,000 with which to begin the construction. At the last session of Congress \$350,000 was appropriated for purchase of additional land necessary for a site for the proposed Army medical school at the Walter Reed General Hospital. (See Army appropriation act, Public No. 7, p. 21.) The \$500,000 requested is urgently needed that the gradual development of the proposed medical center may go on and that the Army medical school may be housed in suitable quarters at the place where it will be most useful at the earliest possible date.

JANUARY 29, 1919.

From: The Surgeon General, United States Army.

To: The Chief of Staff, Washington, D. C.

Subject: Walter Reed medical center, proposed legislation for.

1. The following project for a medical center at the Walter Reed Hospital is presented for your consideration, in conformity with our recent informal conversation.

2. This hospital was designed from its inception, about 10 years ago, to be the principal general hospital of the Army; a place where any member of the military forces could at all times secure the best the country affords in scientific medicine and in skillful and expert surgery, including the necessary diagnostic examinations and special forms of treatment.

3. Up to the beginning of the war the hospital had developed satisfactorily, although the rate of progress had been extremely slow. Since then expansion has been rapid, but the new buildings are all of a temporary nature, and in the future must necessarily be replaced by a more suitable permanent type of construction. The character of the work done at this hospital is good. I need not urge the importance of maintaining it, both during and after demobilization, at its present high standard, and of improving it from time to time to keep pace with each new advance in the methods used for the care and treatment of the sick. For this reason now is the opportune time to outline and to begin work on a comprehensive plan of development.

4. It may not be out of place to state that a general hospital of the best type is one which is characterized by "teamwork." Each department of medicine and surgery, including the established specialties, is represented by one or more highly trained men. The great success of American general hospitals is principally due to this "group" or "team" system, in which about 12 departments of medicine are represented on the hospital staff, so that each patient without delay or extra expense receives whatever special or general examination and treatment is required. The hospital of the Mayo brothers in Rochester, Minn., is the best known example of the American type of general hospitals. They have taken an enthusiastic interest in this project and have volunteered to advise and assist me at all times in the proper development of the Walter Reed.

5. Hospitals have long been divided into "teaching" or university, and nonteaching hospitals. The teaching hospital is generally acknowledged as the better of the two types, and the second part of this project concerns the future of the Army medical school, which should be closely associated with the hospital.

6. Briefly, the Army Medical School was founded in 1892 by Gen. George Sternberg, and Maj. Walter Reed was the first officer detailed to it. The number of students was small; the Medical Corps itself in that day comprised only 157 officers, and the sessions of the school were held in two or three rooms at the Army Medical Museum Building. It was moved in 1910 to more commodious quarters in a rented building on Thirteenth Street, and in 1915, when that location had been outgrown, to its present location in another rented building at 462 Louisiana Avenue. The disadvantages of the present situation are many, but the greatest is the distance between the hospital and the school, which makes it impossible to give the students the proper bedside training or to utilize the students in the hospital in a way to improve the character of the treatment given to patients. The same obstacle precludes the use of the faculty of the school as an integral part of the consulting staff of the hospital. In short, neither the hospital nor the school can develop properly until they are brought together at one place.

7. The same reasons to a lesser degree apply to the school for the Dental Corps, and in this plan provision has also been made for a post-graduate school for Army dentists.

8. Only part of the work of the veterinary school can be done at the Walter Reed, but certain fundamental subjects, such as pathology, bacteriology, and contagious and epidemic diseases of animals, can be most advantageously studied in the laboratories at the Army Medical School.

9. An advantage of no mean importance in bringing together the new and older officers of the Medical, Dental, and Veterinary Corps within a single instruction center,

thus approximating university conditions, will be to make them acquainted with one another and with the peculiar problems which each has to solve, and in this way the misunderstandings and frictions of the past will tend to disappear and produce higher morale.

10. The third and last element is the Army Medical Museum and Library, now located in an outgrown building on the Mall which has already been condemned in the plans for the improvement of the Mall and the development of the adjoining part of Washington. Both the museum and library are essential parts of a teaching institution, and should be properly housed on the grounds of the Walter Reed, in close proximity to the school buildings. In their new location they will be just as accessible to the medical profession and to the general public as they are now, and the close contact with the problems of teaching and care of the sick will inevitably lead to an improvement in the character of the exhibits in the museum and to the greater accessibility and use of current medical literature.

11. Appended hereto is an itemized list of the required buildings and the estimated costs. Each item has been carefully considered and is believed to be necessary to the development of the medical center. Your approval has already been given to the introduction of an item of \$350,000 in the present general deficiency bill, now before Congress, for the purchase of the necessary land, and it is therefore recommended that this entire project be approved and that steps be taken to secure congressional approval and an appropriation for the work at the earliest possible moment.

Buildings.	Floor area, square feet.	Cubic con- tents, cubic feet.	Cost per cubic foot.	Total cost.
School.....	290,000	5,500,000	\$0.40	\$2,200,000
Library.....	78,000	1,750,000	.52	910,000
Museum.....	78,000	1,750,000	.50	875,000
Administration and operating group.....	192,480	3,079,680	.55	1,063,800
Officers' quarters.....	142,250	2,400,000	.26	624,000
Student officers' quarters.....	284,500	4,800,000	.25	1,200,000
Nurses' group.....	25,000	1,940,000	.26	504,400
Noncommissioned officers' quarters.....	48,000	720,000	.26	127,200
Medical Department detachment.....	95,680	1,618,000	.26	420,700
Wards, 2 groups, 2,000 beds.....	406,400	6,096,000	.30	1,828,800
Kitchen and mess, post exchange storage.....	70,400	1,126,800	.20	225,360
Quartermaster transport.....	54,720	568,240	.18	106,800
Stables and shops.....	29,375	616,875	.18	111,000
Gymnasium, drill hall.....	15,000	433,400	.25	108,350
Guardhouse.....	10,000	250,000	.24	60,000
Chapel.....	7,000	300,000	.20	60,000
Power house, laundry, etc.....				350,000
Band stand, entrance gates.....				40,000
Fences, sentry boxes, etc.....				20,000
Grading and road building.....				160,000
Lighting of grounds.....				9,000
Total.....				11,713,410
Deduct for possible decline in building costs during the execution of the project.....				1,713,410
Net total required.....				10,000,000

12. The current appropriation "Construction and repair of hospitals, 1919," carries an unobligated balance much more than ample to cover this entire work. It is therefore recommended that Congress be asked to authorize the use of the required amount of such balance, by including in early legislation, say the next deficiency bill, a provision reading substantially as follows:

"That the sum of \$10,000,000 is hereby set aside and reappropriated out of the unexpended balance of the appropriation 'Construction and repair of hospitals, 1919,' for the following purposes, including, in the discretion of the Secretary of War, the employment of professional and technical experts in architecture, without regard to civil-service laws, rules, and regulations, and for such purposes shall be available until expended, to wit: For the construction on the grounds of the Walter Reed General Hospital, in the District of Columbia, or any extensions thereof, of such buildings, additions to buildings, and improvements as may be necessary in the judgment of the Secretary of War to the complete development of that hospital as the chief medical center of the Army, including the Army Medical School, the Army Medical Library (heretofore known as the Library of the Surgeon General's Office), the Army Medical Museum, administration buildings, operating pavilions, laboratories, surgical and medical wards, quarters for officers, nurses, and noncommissioned

officers, apartment buildings to be used as quarters, barracks for enlisted men, kitchens and mess halls, post exchange, garages, barns, stables, storehouses, shops, gymnasium, drill hall, guardhouse, chapel, power house, heating plant, lighting system, laundry, band stand, entrance gates, fences, sentry boxes, roads, walks, sewers, water supply, and so forth."

M. W. IRELAND,
Surgeon General, United States Army.

CAMP HENRY KNOX, KY., COMPLETION OF HOSPITAL (U. & R. OF H.), \$85,000.

1. It is proposed to complete the camp hospital at Camp Knox in order to make it available for use. In its present condition it can not be used at all. The parts of the project which are required for completion are as follows: In the power house, the boiler condenser and pump connections, all steam mains to hospitals building, all steam returns, and a 350-foot extension to the railway spur to provide the coal supply; to the ward buildings of the hospital, radiator connections throughout; to the nurses' mess and nurses' quarters, administration building, lavatory and surgical wards, the entire stucco exterior, concrete floors in lavatory, etc., interior woodwork, interior plastering in lavatory, etc., entire plumbing and steam-heating risers, and connecting radiators. All floors of the hospital are to be resurfaced also.

2. The most important part of the entire hospital so far as using it in caring for the sick is concerned is the surgical ward and the lavatory. These buildings in their present condition can not be used. Neither can the ward buildings be used until the power plant is completed and the radiators connected throughout. The part of this project which remains to be done is a part which is absolutely necessary before the buildings can be occupied at all. This project, which has already cost the Government \$1,509,186, is useless for the purpose for which it is intended until the small sum requested is made available and it is completed. The lack of this sum will cause an investment of \$1,424,186 to continue of no benefit whatever to the Army.

3. In a recent bill, Public No. 151 (H. R. 8819), a total of \$75,000 for completion of work at Camp Knox was provided. This was divided into \$25,000 for plumbing, heating, and refrigeration, and \$50,000 for general construction work. The necessary plumbing and heating for the hospital alone will cost \$45,000. The other work necessary to place this hospital in a habitable condition will cost \$40,000. The base hospital can not be used unless it is entirely completed. As it stands, to finish any portion of it for use would cost practically as much as for total completion. In view of the fact that Congress appropriated a total of only \$75,000, and that had this entire amount been expended on the hospital it would still have been unsatisfactory for occupancy, and because it was believed contrary to the wishes of Congress to spend this money for a project which would not have been completed nor of any use if the money was spent, it was decided that this money should be used for completing other projects.

4. At present the camp hospital is operating in a regimental area using barrack buildings as wards. As a fire precaution patients are placed on the first floor only of these buildings, except in cases of serious epidemic. The only toilet facilities are latrines in separate buildings from 30 to 150 feet from the wards. Patients are required to go this distance or use bedpans, in which case the water attendant has the same distance to travel. But 5 of the 17 available wards are supplied with running water, and of that number only 1 has hot water. Wards are heated by warm-air furnaces entirely unsatisfactory for patients, as beds nearest the furnace are excessively hot if the farthestmost beds are made comfortable. Wards are open to the outside and at each opening of the door a draft of cold air rushes in. There is but one door to each ward, a very dangerous fire hazard in the evacuation of patients. There is no adequate operating room. The laboratory is such that only minor work can be done, all else being sent to Camp Taylor, and after the abandonment of that camp it will necessitate the transfer of that work to the department laboratory at Chicago. There are no proper facilities for X-ray work, it also being sent to Camp Taylor.

5. The camp hospital has been operating in this area since December 1, 1918. It occupied the area as the best available building at that time and acceptable only for such time as the base hospital was in process of construction. It was to have been completed by June, 1919. Its continued use as a hospital is entirely unsatisfactory; its general and ward administration is unwieldy and disconnected; it can not offer to its soldier patients what it should in comfort and welfare to the sick. An influenza epidemic in March, 1920, in a command of 1,500 men necessitated the use of 17 wards, which is almost every available squad room. (These wards are so small that allowing a safe floor space for patients only 12 can be accommodated per ward.) The capacity of the camp is about 15,000 men, and with a similar epidemic, of a command of even

half that number, there would have been much suffering and an astounding death rate as a result of improper hospital facilities. As a plant, this hospital is probably the poorest in the Army.

6. It is believed that the only wise course for the Government is that this money be appropriated at once for the following reasons:

(a) Unless appropriated it means that an investment which has already cost the Government \$1,424,186 will continue of absolutely no benefit whatever.

(b) Because the present buildings used for hospital purposes are so inappropriate and unsatisfactory that their continued use as such is indefensible.

CAMP HOLABIRD, CAMP HOSPITAL (C. & R. of H.), \$75,000.

1. It is proposed at the following buildings at Camp Holabird, Md., to provide accommodations for the care of 86 sick at this post: Buildings Nos. 317 and 313, officers' quarters; buildings Nos. 256 and 257, barracks; medical infirmary, No. 315; single-ward hospital, No. 208.

2. The sick from Camp Holabird have in the past been cared for entirely at General Hospital No. 2, Fort McHenry, Md. This hospital must be closed some time this spring or early summer. There is no other place where the sick from Camp Holabird can be cared for, but continuing the operation of General Hospital No. 2 for these patients alone is out of the question as it is a very large institution and the number of sick received from Camp Holabird is very small.

3. Surveys have been made at both Camp Holabird and at Fort Howard for determining the feasibility of caring for the sick of Camp Holabird at either of these places. In the event that General Hospital No. 2 must close prior to June 30 and no special authority is received from Congress for constructing a hospital at Camp Holabird, it will be necessary to make certain alterations at Fort Howard in order that the sick from Camp Holabird may be cared for there, this because Congress has forbidden the expenditure of money for new construction at Camp Holabird.

ALCATRAZ ISLAND, CALIF., SHOP BUILDING, SALVAGE DIVISION, \$35,000.

1. It is proposed to erect a reinforced concrete building, 40 by 110 feet, for housing reclamation unit, consisting of one dry-cleaning building, two corridors, one sorting and store building, one lavatory, and one finishing room. This project was originally approved and money authorized in September, 1918, out of 1919 funds. Due to certain misunderstandings in regard to location and material, the construction was delayed until 1919 funds were no longer available and the authorization was canceled.

2. Clothing, shoe, and hat repair shops, the laundry and cleaning plants are the principal industries on which prison labor is utilized. The clothing, shoe, hat repair, and cleaning plants have not more than 50 per cent of the floor space necessary to properly carry on their work. The proposed building is to give these activities the additional floor space which they sorely need and to replace in so doing a number of nondescript frame shacks which are most unsightly and constitute serious fire hazard.

3. The great volume of work which this institution is called upon to do is beyond the capacity of the present equipment. A surplus of labor is available. Therefore, in order that every man may be utilized at his highest rate of efficiency, it is considered economically necessary that this building be constructed. At present the reclamation shops here can scarcely care for the transport service and the posts in the immediate vicinity of San Francisco. With the addition of this shop the work not only of these posts but all posts farther distant along the Pacific coast may be brought in over the 100 per cent land-grant railways and done at this place.

4. The United States Disciplinary Barracks at Alcatraz Island has for its primary purpose the rehabilitation of the petty criminal soldiers. So far as possible the atmosphere of the average prison is removed and the inmate is given every help and encouragement for securing his reinstatement in the Army or returning to civil life equipped to take his place as a useful and respected citizen. The department of vocational training plays the most important part in achieving this result. This building is therefore necessary if for no other reason than that of providing modern and adequate facilities for vocational training.

5. There are two urgent reasons, therefore, for the construction of this building, either of which is alone sufficient to warrant the expenditure, namely—

(a) From an economic standpoint the increase of production of all industries will make the project as a whole nearly self-supporting.

(b) Enhance the mental and industrial value of the graduates from the institution by giving them a broader field in which to develop.

6. There are 425 prisoners at this post (Mar. 28, 1920).

DEER ISLAND, COAST DEFENSES OF BOSTON, PURCHASE OF LAND
(R. W. W. & D.), \$100.

1. It is proposed to purchase the necessary land for approaches to a bridge to be constructed across Shirley Gut, connecting Deer Island with the mainland. The metropolitan water and sewage board of Boston has voted that this land should be conveyed to the United States Government for the sum of \$100.

2. The city of Boston, through the city of Boston penal institution department, Sanford Bates, commissioner, in a letter under date of March 20, 1919, agreed to lease to the United States Government for a period of 99 years a right of way 50 feet wide for a road from the Deer Island terminus of the bridge around the north and east side of the island to the Government reservation, for \$1 per year. This right of way passes over property belonging to the city of Boston, which is used for a penal institution.

3. The land which it is desired to purchase is necessary for the approaches at each end of a bridge which it is proposed to build over Shirley Gut. The bridge and necessary roadways will be constructed from funds being requested of Congress under the appropriation "Roads, walks, wharves, and drainage, fiscal year 1921."

4. The supplies for the different forts in the coast defenses of Boston are distributed from the wharf at Fort Banks. At present the supplies for Deer Island must be loaded on a boat at this wharf and transported to the Deer Island wharf and unloaded there. An estimate has been received by the Chief of Construction Division from the quartermaster, Northeastern Department for repairs and replacements to the wharf at Fort Banks and for dredging to the channel necessary to enable boats to reach the wharf at a cost of \$100,000. In order to obviate the necessity for this work, it is proposed to build a bridge across Shirley Gut. If this is done the wharf at Fort Banks can be abandoned, thus saving the entire cost for this project. The entire project in connection with this bridge is divided into three items: The bridge, itself, \$15,000, roads for approaches and lease of right of way, \$14,500, and the purchase of the land \$100. Thus the gross cost of this project is \$29,500, as compared with \$100,000 required to continue the present system of supply.

5. This entire project, which would result in a great saving of money to the Government, hinges upon the authority to purchase the land necessary for the approaches to the bridge. The \$100 requested is an absolutely necessary prerequisite for this entire project.

FORT LEAVENWORTH, KANS., WATER SUPPLY SYSTEM (W. & S.), \$160,000.

1. It is proposed to improve the present water-supply system of Fort Leavenworth and the United States Disciplinary Barracks by the construction of a 1,000,000-gallon concrete reservoir, enlarging of all mains, and such other improvements as are necessary to provide an adequate supply of water and sufficient pressure for fire protection.

2. Fort Leavenworth and the United States Disciplinary Barracks receive their water from the Missouri River through the pumping and filtration plant of the Leavenworth City & Fort Leavenworth Water Co. This company furnishes water also to the Soldiers' Home, the Federal penitentiary, and the city of Leavenworth. The supply to the fort and the Disciplinary Barracks is the only part of this total water supply which is filtered. The water furnished the remaining places is unfiltered. Complaints of low pressure and an unreliable source of supply have caused several investigations and reports on this system during the past two years. Because of this, a board of officers was appointed by the Chief of Construction Division on December 20, 1919, for the purpose of recommending what measures, if any, should be taken for improving the water supply at this place.

3. After a thorough study of the existing conditions of the water supply at this post the board recommended that:

"(a) That any action on the part of the War Department relative to the improvement of the plant and equipment of the Leavenworth City & Fort Leavenworth Water Co. for the filtration of the total water supply be deferred until its necessity shall have been more fully demonstrated.

"(b) That the distribution system to Fort Leavenworth and the Disciplinary Barracks be enlarged and extended to sustain the required pressure for fire protection, and that a concrete reservoir of 1,000,000 gallons capacity be constructed, in accordance with plans and specifications to be prepared by the Construction Division of the Army, at an estimated cost of \$160,000.

"(c) That the work of enlarging and extending the water distribution system to Fort Leavenworth and the Disciplinary Barracks, and the construction of a concrete reservoir should be started immediately, weather conditions permitting, and carried through to completion at the earliest possible date.

"(d) That the work of enlarging the distribution and storage system is entirely distinct from the project of improving the plant and equipment of the Leavenworth City & Fort Leavenworth Water Co., and should be started at once, irrespective of any decision relative to the filtration of the total water supply."

4. The water distribution system from the pumping and filtration plant to Fort Leavenworth and to the United States Disciplinary Barracks is utterly inadequate to deliver water at these points at the pressure necessary for proper fire protection. Owing to this lack of pressure, within the past year there have been two fires in Government property in which a total of \$350,000 worth of property was destroyed. This loss would almost certainly have been avoided, or at least greatly reduced, if the water supply and pressure had been adequate. The installation of this enlarged water-storage and distribution system is thus rendered imperative as a matter of self-protection.

FORT LEAVENWORTH, MOTOR TRAINING SCHOOL (B. & Q., \$230,000; R. S., \$90,000 W. & S., \$30,000; R. W. W. & D., \$54,256).

1. This project consists in the construction of a mechanical repair shop, a storage building, garage, and acetylene generator house, with railroad spur, road, and parking space of macadam construction, outside electric wiring, and fire protection complete. The shop and storage building are to be of reinforced-concrete construction with tile walls, but otherwise of standard design. The garage building and acetylene generator house will be of standard frame construction with tile walls. The repair shop and generator building are to have water and are to be heated. Heat and power are to be obtained by laying a steam main to the central power plant at the barracks. All buildings are to have electric lights and sprinkler systems. Prison labor for this construction is available at the barracks, but the superintendent, foremen, and certain amount of business equipment for conducting the job will be necessary. The necessary lumber, steel sash, plumbing fixtures, and electric wiring materials are in the possession of the Government. Sand and crushed stone are obtainable at the site. The total estimated cost of these shops is \$708,900, but with the use of materials on hand and labor from the personnel at the disciplinary barracks, a total saving of \$304,644 can be effected. This leaves a cash expenditure of \$404,256.

2. This project is part of the plan of the Motor Transport Corps for taking care of motor transport equipment for an Army of peace strength, and they are considered necessary for the proper functioning of that Army. It is proposed that the plant be operated by the personnel of the disciplinary barracks, and the training these men would receive alone is considered of sufficient importance to warrant its authorization.

3. The following extract from the congressional records of June 25, 1919, page 1830, is quoted:

"Mr. CURTIS. I desire to ask the chairman a question with reference to an item which was sent up by the War Department. It asks for an appropriation of \$383,000 for the building of a mechanical repair shop at Fort Leavenworth, Kans. I ask the chairman if the item requested by the department can be taken care of out of the lump-sum appropriation for barracks and quarters, water supply, etc.

"Mr. WADSWORTH. It is my opinion that it can be taken care of out of the item for barracks and quarters, water, sewers, roads, walks, and drainage."

However, it was held by the Adjutant General of the Army that section 1136 of Revised Statutes was applicable to this construction and that it, therefore, could not be undertaken without specific authorization from Congress.

4. Attention is invited to copies of memoranda of the Chief of Motor Transport Corps, dated April 2 and June 5, respectively. Attention is invited especially to paragraphs 3, 7, 11, and 12 of the memorandum of April 2, 1919.

5. Since the above was written, due to the discharge of a considerable number of prisoners at the disciplinary barracks, prison labor is no longer available. Also a large amount of the surplus material which was originally intended to be used in this project has been disposed of. It is proposed now to perform as large a part of the total project as is possible from the funds requested herewith. It is not believed that this amount will complete the project, and it is impossible to say at this time just exactly what proportion of the project it will do, because detailed knowledge of the exact amount of surplus material at present available is not at hand. Any balance necessary to complete the entire project will be requested from Congress at a later date.

APRIL 2, 1919.

Memorandum for the Secretary of War.

Subject: Repair unit and shop at Fort Leavenworth, Kans.

1. It is recommended that a repair unit and a standardized mechanical repair shop of the Motor Transport Corps be located at Fort Leavenworth, Kans. The necessary

personnel has been provided for. It is recommended that the shop be built by labor from the United States Disciplinary Barracks from surplus material in the hands of the Construction Division, supplemented by the purchase of such material as may be necessary.

2. Fort Leavenworth is the location of the Army School of the Line and Staff College, and in view of the probable increasing development of motor vehicles for military use, it is highly desirable that a repair unit be located at this staff school in order that future staff officers may become familiar with motor transport repair problems. One of the most expensive lessons of the present war was the failure of staff officers to realize the importance of providing repair facilities for motor vehicles as soon as they are put in use. Fort Leavenworth is in the geographical center of the United States, and for this reason is strategically located for the location of spare parts, supply and repair depot, and park for service of motor vehicles, regardless of whether the operations be on the Gulf coast, Mexican border, or Pacific coast.

3. Viewing the situation from a combined military and business point of view and taking into consideration the efficiency of the Motor Transport Corps and the whole Army as well as the many other important features connected therewith, it is the opinion of this corps that the failure to locate such a camp at Fort Leavenworth will prove a heavy loss to the Government. Leavenworth is geographically located in a section of the country that makes it accessible to many of the large Army camps and fields that are permanent and that have been recommended for purchase. The following permanent stations would be furnished repairs from a shop at Fort Leavenworth: Camp Dodge, Iowa; Camp Grant, Ill.; Camp Funston, Kans.; Fort Riley, Kans.; Jefferson Barracks, Mo.; Fort Omaha, Nebr.; Fort Des Moines, Iowa; Fort Robinson, Nebr.; Fort Meade, S. Dak.; Fort Lincoln, N. Dak.; Fort Snelling, Minn.; and Fort Sheridan, Ill. There would be in addition to the above permanent posts all independent stations, such as general hospitals, ordnance arsenals, flying fields, and general depots of the Quartermaster Corps located within the territorial limits of the Central Department.

4. There are four large Army camps and seven fields and forts within a radius of less than 550 miles, namely, Fort Omaha, Fort Cook, Post Field, Fort Sill, Camp Doniphan, Camp Funston, Camp Pike, Chanute Field, Scott Field, Camp Dodge, and Camp Grant, that are already the property of the Government or have been recommended for purchase, and twelve or more other Army posts and forts within a radius of less than a thousand miles, namely, Fort Logan, Fort Ducheane, Fort Douglas, Fort D. A. Russell, Fort Robinson, Fort Yellowstone, Fort McKenzie, Fort Keogh, Fort Meade, Fort Lincoln, Fort Snelling, and Fort Sheridan.

5. Fort Leavenworth can be reached by many railroads and highways from the various camps, fields, and posts mentioned above, and congestion of traffic would almost be impossible, as three of our great western trunk lines reach Leavenworth, namely, Missouri Pacific, Santa Fe, Chicago, Rock Island & Pacific, and nearly all of the various camps and fields named above are reached by one of these railroads and in some cases all three of them, the railroads and mileage being given below:

PERMANENT CAMPS AND FIELDS WITHIN A RADIUS OF 500 MILES.

Railroad routes from Fort Leavenworth, Kans.:

To Fort Omaha and Fort Crook, Nebr., via Missouri Pacific Railroad shows 169 miles to Fort Omaha and 159 miles to Fort Crook.

To Post Field, Doniphan, and Fort Sill Okla., via Chicago, Rock Island & Pacific Railroad shows 477 miles.

To Camp Funston, Kans., via Union Pacific Railroad, 131 miles.

CAMPS AND FIELDS THAT HAVE BEEN RECOMMENDED FOR PURCHASE.

Railroad routes from Fort Leavenworth, Kans.:

To Camp Pike, Ark., via Missouri Pacific Railroad shows 528 miles.

To Scott Field, Ill., via Missouri Pacific Railroad shows 300 miles.

To Chanute Field, Ill., via Missouri Pacific Railroad shows 507 miles.

To Camp Dodge, Iowa, via Chicago & Great Western Railroad shows 194 miles.

To Camp Grant, Ill., via Chicago, Milwaukee & St. Paul Railroad shows 165 miles.

The fact is that Fort Leavenworth is located right in the western network of railroads and highways, and we say highways because this is a most important feature in locating a motor transport camp.

6. Leavenworth is reached by nearly all of the great national highways and trails from the east to the west and from the north to the south, thereby enabling convoys to reach the various camps as follows:

HIGHWAY ROUTES FROM FORT LEAVENWORTH, KANS., TO VARIOUS CAMPS.

To Fort Omaha and Fort Cook, Nebr., 190 miles to former, 175 miles to latter, via Atchison, Hiawatha, Auburn, and Nebraska City, 16 miles of this route macadam, the remainder graded dirt road.

To Post Field, Fort Sill, and Camp Doniphan, 480 miles via Kansas City, Emporia, Newton (Kans.), south of Meridian Road via Enid, El Reno, and Anadarko, 15 miles macadam and concrete, remainder good dirt road, kept in especially good condition.

To Camp Funston, 110 miles via Kansas City, Topeka, and Manhattan, first 26 miles gravel, balance graded dirt.

To Camp Pike, 558 miles via Butler (Mo.), Nevada, Joplin, Fort Smith, east through Russellville, 30 miles macadam, 140 miles good graded dirt, and remainder is all of fair country dirt roads.

To Chanute Field, Rantoul, Ill., 457 miles via Kansas City north to Chillicothe, east over the Pikes Peak Highway via Hannibal, Springfield, Decatur, and Champagne. This is all graded dirt road, and in generally good condition.

To Scott Field, Belleville, Ill., 371 miles via Kansas City, Independence, Sedalia, Jefferson City, and St. Louis, dirt and stone roads, with a few rough spots. The national Old Trail road by Glasgow and Warrenton is not as good as the above route because of having received the bulk of heavy travel during the past few years.

To Camp Dodge, 261 miles via Kansas City, north through Trimble, Bethany, Osceola, and Indeola, dirt and gravel road, good with the exception of a few stretches.

To Camp Grant, 543 miles via Kansas City, Chillicothe, Powersville, Ottumwa, Davenport, Clinton, Rochelle, mostly good graded dirt road.

These highways are being constantly improved with Government, State, county, and community funds, and it is to be expected, will within a few years, be a network of public macadam highways.

7. The Eastern, Western, and Southeastern Departments all have permanent motor transport camps, yet there is not a motor transport camp in the great Central Department, which department has more large permanent Army camps, except possibly the Eastern Department, and at present all the Army motor equipment in this, the second largest area of war activities, must either be shipped east, west, or south for storage or repair, thereby creating much unnecessary expense and delay.

8. In the event of the establishment of this shop, it is suggested that there be provided not less than 5,000 storage capacity, for in the central department there are about 4,500 vehicles, exclusive of motor cycles, of which approximately 25 per cent are in the shops at all times for overhauling or needed repairs.

9. There are now provided shops at the following points with rebuild capacity of trucks and automobiles per year:

Camp Holabird.....	5,000
Camp Jessup.....	5,000
Camp Normoyle.....	5,000
Camp Boyd.....	2,000
Total.....	17,000

For the first three years it will probably be operated at not over 75 per cent efficiency, i. e., 12,750 or 12,000 trucks and automobiles. These shops will also be able to take care of all motor cycles in use in their respective districts. Some trucks will have to be rebuilt after one year's service, and others after two years, depending on class of service. This will give an average of 18 months or a capacity for 18,000 trucks and automobiles per year. Each shop will have practically an unlimited capacity for overhaul jobs. From the above it will be seen that from a business point of view, it is highly desirable and economical to locate a motor transport repair shop at Fort Leavenworth on the permanent military reservation. It is also highly probable that in addition to motor vehicles operated by the Motor Transport Corps that there will be designed for use with combat troops other motor equipment, such as tanks, cargo-carrying caterpillars, and the like. These vehicles all require repairs and rebuilding. While this is not prescribed at this time, it is believed the motor transport shops will be called on to do this and possibly will be called on to rebuild aeroplane motors. These shops are so designed that by using shop manual and under supervision of a few trained mechanics, any type of motor can be overhauled and rebuilt.

10. Memorandum of March 17, 1919, approved for use of the peace Army the following: 3,740 total motor cars; 19,263 motor trucks, 2,644 motor cycles, or total motor vehicles 26,511. In addition there was approved to be retained for the peace strength Army 2,740 bicycles and 4,665 trailers of various kinds, or a total of 33,996 vehicles.

As provided for in above-mentioned memorandum, there will also be retained motor vehicles made under special agreement for exclusive Government use. All of the above vehicles require repair and periodical overhaul and rebuilding and especially those of the four-wheel-drive and quad types. It has also been agreed that where practicable the Army will overhaul and rebuild surplus Army motor vehicles turned over to the Post Office Department under the provisions of an act of Congress, the payment for this service and material to be made by transfer of funds from the Post Office Department to the War Department. The number of these vehicles already turned over to the Post Office is approximately 2,000, and the additional number required according to estimate of the Post Office officials is approximately 7,000. There will also be approximately 1,000 vehicles turned over to the Public Health Service, and probably about 10,000 to the Department of Agriculture, and other Government departments. It is a waste of money to put vehicles in service without providing for immediate repair facilities. As these other Government departments have not provided for these facilities, it is highly probable that sooner or later the War Department will be requested to assist in furnishing repairs, these repairs to be paid for by transfer of funds.

11. Another important feature to consider in locating a motor transport camp at Leavenworth is the use of the military prisoners. Instead of using these men to build highways, etc., or having them idle in the barracks, would it not be better to utilize them in repair shops and such other labor connected with motor transport camps which will not only mean a big saving to the Government in a financial way but will be teaching the men a trade that may be utilized by them when discharged from Fort Leavenworth. Submitted herewith is a map "Exhibit A" showing location of Leavenworth and various camps mentioned herein, as well as the number of miles by railways and highways.

12. These motor transport shops were designed by Mr. Randles of the Foote-Burt Co., Cleveland, Ohio, with a view to utilizing untrained men and progressively training them in their duties under the supervision of a few trained specialists and mechanics. The shop manual goes in minute details in prescribing limits, clearances, and dimensions so that untrained men can turn out suitable work. The shops are arranged for progressive work, and if a man passes through all of the positions from laborer to inspector, he will on completion of from one to two years' course be a qualified motor-vehicle service man.

By authority of the Chief Motor Transport Corps.

JAMES W. FURLOW,

Colonel, General Staff.

Deputy Chief Motor Transport Corps.

JUNE 5, 1919.

Memorandum for Gen. Jervey, Director of Operations.

Subject: Repair unit and shop at Fort Leavenworth.

1. With reference to the memorandum of the Acting Secretary of War, dated April 10, 1919, herewith, it would appear that the Acting Secretary did not thoroughly understand what the plan for building and equipping shop at Fort Leavenworth contemplated. It is recommended that the disapproval of this proposition be reconsidered and that the project be approved, or, if necessary, that it be submitted to Congress recommending approval.

2. These repair facilities are so located geographically as to make them readily suitable and convenient, i. e., vehicles requiring service in these shops may be sent thereto with a minimum of expense for transportation by reason of their accessibility, not only for Army vehicles but for those of such other governmental departments as may be authorized to have repairs effected therein. A less extended system of shops not geographically distributed would be uneconomical, for the reason that vehicles in need of repairs could not be sent over land for any considerable distances, and long hauls by mail would involve exorbitant costs for transportation. The Fort Leavenworth project will take care of this situation and forms a necessary part of the system.

3. The United States Disciplinary Barracks are at this place and it is the idea to have approximately \$428,000 worth of necessary work performed by inmates thereof. The crying need for all institutions of this nature is to provide work as an outlet for the energies of the men, and thereby assist in their rehabilitation so far as possible, and in addition to that to provide them as much as possible an education in the trades.

4. It is my understanding that the Disciplinary Barracks now have a large number of inmates for whom it is rather difficult, with the present facilities, to provide

work. Items of materials and shop equipment, amounting approximately to \$697,000, are now on hand and surplus. The production in the commercial world of these items was speeded up to take care of war necessities and with the coming peace, these necessities, of course, are materially reduced. Therefore the question of disposing of surplus materials and tool equipment presents the complication of placing additional supplies of this nature on the market over and above the abnormal production in the hands of manufacturers.

5. If these supplies are disposed of by sale, it will naturally follow that the Government will lose considerable of the cost price in this process. The full value of the original cost will be obtained therefrom if they are devoted to the construction and equipment of a Government owned shop.

6. The second paragraph of the Acting Secretary's memorandum indicates that my memorandum of April 2, 1919, copy attached, is not fully understood. Paragraph 9 of my memorandum shows in detail that the total capacity of the motor transport shops now erected is but 18,000 trucks, while opposed to this in paragraph 10 of the same memorandum is shown that the Army alone will have to maintain approximately 3,604 passenger automobiles and 19,263 trucks, or a total of practically 23,000 vehicles. As the existing repair facilities cover but 18,000 vehicles, it is evident that there are 5,000 vehicles to which repairs must be given and for which no repair facilities are as yet available.

7. With reference to the fourth paragraph of the Acting Secretary's memorandum the Public Health Service and the Post Office Department, under dates of April 17 and May 12, respectively, request that motor vehicles belonging to those departments to be maintained by the Army, approximately 2,000 cars for the Bureau of Public Health and 7,000 for the Post Office Department. Copies of requests are inclosed herewith.

8. It is believed that this shop is necessary for economical, military, and business reasons, which are set forth in memorandum of April 2, attached. Motor vehicles for military purposes will become increasingly important in the future. Large numbers of motor vehicles are now used in the Artillery, and it is understood that the present plans and recommendations of the Field Artillery Board provide for more complete motorization. No shops for motorized artillery, other than the existing ones at Camp Holabird at Baltimore, Camp Jesup at Atlanta, Ga., Camp Normoyle at San Antonio and Camp Boyd at El Paso have been constructed or planned, except the repair shops assigned to Artillery organizations. The shops assigned to Artillery organizations are only suitable for service repairs and minor overhaul work, so all of the rebuild and larger overhaul work must be done in existing motor transport shops previously enumerated.

9. The Secretary of War, in attached memorandum of May 26 to the Chief of Staff, stated that there is not objection to the Motor Transport Corps undertaking to repair and rebuild motor vehicles for the Post Office or for any other department of the Government to the extent that this can be done with the facilities it is necessary to maintain for War Department uses and that he would disapprove any increase or extension of War Department facilities and personnel for such a purpose. The proposed shop at Fort Leavenworth is not intended as an increase of facilities for performing repair work for the Post Office Department or any other governmental agencies, but this shop is necessary in order to complete the shop system on account of the need of one in the geographical location of Fort Leavenworth. Any agreements for repair of vehicles for other departments of the Government now in existence will not necessarily require any increase of facilities or personnel as it is the idea to absorb so much of that work as is possible with existing facilities. In this manner a number of economies will result, principally among them being a maximum efficiency in training of personnel and reduced overhead costs for repairing Army vehicles due to shops being operated at full capacities.

10. It is evident therefore from the foregoing that the Fort Leavenworth project is a necessary one from every point of view and its approval can not be too strongly urged. The construction will be a saving rather than an expense, and the operation after completion will be a distinct economy.

By authority of the Chief Motor Transport Corps.

JAMES W. FURLOW,
Colonel, General Staff,
Deputy Chief, Motor Transport Corps.

**FORT LEAVENWORTH DISCIPLINARY BARRACKS SWIMMING POOL (B. & Q., \$22,000;
R. S., \$5,100; W. & S., \$5,600).**

1. It is proposed to construct a semireproof building, 56 by 140 feet, containing a swimming tank, 40 by 100 feet, dressing room, shower baths, toilets, administration, and utilities rooms, heating, plumbing, electric wiring, and fire protection. The estimate does not include labor and such other material as the Disciplinary Barracks can supply.

2. This case originated by the Secretary of War, who, on July 3, 1919, directed the commanding officer of the Disciplinary Barracks to submit plans for the building, as above outlined. It was desired to construct this building at once, but this could not be done until special authorization could be obtained from Congress.

3. This swimming pool is highly desirable to aid in training the inmates of the Disciplinary Barracks in the habits of cleanliness and in restoring their morale. It is believed that the benefits which will be derived by the inmates of the Disciplinary Barracks from this swimming pool will be sufficient to more than repay for the cost of constructing it.

4. This has been personally recommended by the Secretary of War after a visit to Fort Leavenworth.

**FORT LEAVENWORTH, OFFICERS' QUARTERS FOR ARMY SERVICE SCHOOL (B. & Q.,
\$531,462; R. S., \$82,400; W. & S., \$112,600).**

1. Present plans of the War Department contemplate sending approximately 200 officers to the service schools each year, beginning next year. As at present, there are only quarters for approximately 150 officers, it will be necessary to construct quarters for 50 additional officers. It is proposed to construct four three-story brick apartment buildings, each to contain about 12 apartments, making 50 apartments in all. Apartments are to be of five and six rooms. As practically all of the officers assigned to service schools will be field officers or of higher rank, apartments must be of this size.

2. Maj. Gen. Charles H. Muir, commandant of the post, thoroughly indorses this project.

3. Unless this expenditure is authorized so that these officers may be provided with suitable quarters on the post, it will be necessary either to curtail the program of instruction at the service schools or for the officers to live in the town of Leavenworth, using trolley cars back and forth from the post.

4. According to the present plans the scheme of instruction will be curtailed rather than to detail officers to the service schools who can not live on the post. Should this be changed and the original plan executed, the average commutation which 50 officers of this rank would draw each year is approximately \$55,000. In addition, the officers would be forced to travel to and from the post by trolley car, which would result in a very considerable lessening in the value of the course and at a cost to the Government which would in 13 years equal the entire cost for constructing the permanent quarters. It is also extremely doubtful if the town of Leavenworth can accommodate 50 officers of this rank with suitable quarters.

5. The present plans of the War Department for increasing the efficiency of the Army call for progressive series of schools. Officers will first be detailed to Camp Benning and upon graduation there and service with troops for a few years will be detailed to the service schools at Fort Leavenworth. After an additional service with troops the graduates from Leavenworth will be sent to the General Staff College for a final course. It is necessary for the proper execution of this plan that each link in the chain of instruction maintain its proper part.

Any curtailment in the instruction at any one school will seriously impair the success of the scheme. Unless these quarters can be built it will mean that approximately 25 per cent of the officers who are graduated from Camp Benning and who should attend the service schools will be prevented from so doing.

6. There are at present at Fort Leavenworth the following sets of officers' quarters:

Field officers' quarters.....	16
Line officers' quarters.....	196
Bachelor officers' quarters.....	72

Total..... 284

Of this total approximately 134 sets are required for the use of instructors and officers assigned to organizations located at Fort Leavenworth, leaving approximately 150 officers' quarters available for student officers.

FORT LEAVENWORTH, NONCOMMISSIONED OFFICERS' QUARTERS (B. & Q., \$328,300; R. S., \$29,400; W. & S., \$17,300).

1. It is proposed to construct permanent quarters for noncommissioned officers. There are at present 50 noncommissioned officers who are married who are on duty at the service schools in one capacity or another, and for whom there are no quarters available on the post. They have, therefore, been forced to find quarters for their families in the town of Leavenworth, paying rent there and street car fare back and forth to the post. In view of the pay of these noncommissioned officers and of the present extremely high cost of living, it is difficult to understand how these men can support their families under these conditions.

2. There are at present at Fort Leavenworth 34 noncommissioned officers' quarters. These quarters are at present fully occupied.

3. Gen. Muir is especially urgent in his request for the authorization for these quarters. The instruction of the school suffers seriously because of the fact that they are not resident on the post. It is very urgently requested that this money be authorized, as this is an important project.

FORT NIAGARA FILTRATION PLANT (W. & S.), \$30,000.

1. All water for Fort Niagara is at present pumped from the Niagara River. The sewage from the cities of Buffalo, Niagara Falls, and Tonawanda is emptied into the river above the point of intake of the Fort Niagara water supply. It is possible to see fecal material in the river at the immediate source of supply at almost any time.

2. After being pumped from the river this water is chlorinated to purify it. There is no means for filtering it available. Chlorination does not remove anything from the water. It simply kills certain microscopic organism which might be present. It was never intended that chlorination should displace filtering water, but that it should be an adjunct to filtering water, its principal use being to kill any colon bacillus which might be present. Chlorination is distinctly not an approved method for purifying such water. In addition, it imparts to the water a peculiar odor and taste, which is so distasteful to most people that they prefer to run the risk of contracting a disease rather than use chlorinated water.

3. Samples of this water were forwarded to the Army Medical School at Washington, D. C., and because of the reports rendered by them the authorities on the post ordered that no water be used for drinking except distilled water, which was delivered to all quarters. By this means the danger of contracting any disease because of the impure water drawn from the river was obviated. However, distilled water is no more pleasant to the taste than boiled water, and no one cares to drink that if it can possibly be avoided.

4. While there has apparently been no disease on the post which might be attributed to the water supply, there has been considerable sickness in communities round-about, which the local authorities have attributed to their water supply, which is similar to that of the fort. It is not believed that the proper measures have been taken by the Government toward safeguarding the troops on this post against disease as long as the present water supply is left as it is.

5. It is proposed to construct an adequate filtration plant and pumping system, drawing water from a proper distance in the adjacent lake. This will furnish the post an ample and pure supply of water at all times. The present supply of water at Fort Niagara is a reflection upon the Government, and it is of the utmost importance that a modern filtration plant be installed immediately. This will have an average capacity of 200,000 gallons per day and a maximum capacity of 400,000 gallons per day for a limited period in case of an emergency.

PLATTSBURG BARRACKS INCINERATOR, \$8,000.

1. Plattsburg Barracks has accommodations for a permanent garrison of 1,059 men, and temporary quarters for 4,920 men, or a total population of 5,979 men. There has never been installed at this camp an incinerator to cremate the garbage or waste products of the entire camp, but several small open-type or kitchen incinerators have been used. There is no equipment for mechanical washing and sterilizing of garbage cans, and the present methods of doing this work are unsatisfactory and expensive. This office strongly recommends the installation of a United States standard incinerator of suitable size, and a garbage can wash equipment; also a permanent structure to house the incinerator and can wash equipment.

2. Experience has shown that the most economical method of disposing of waste products and of cleansing and sterilizing garbage cans is to locate the can wash equip-

ment at the incinerating plant where the hot water required can be furnished by the heat from the incinerator without cost other than the original cost of installation, and where the work of cleansing and sterilizing the cans can be done by the same force in charge of the operation of the plant. The building to house incinerator and can wash equipment as now planned provides a loading and unloading platform, and all garbage cans are brought direct from the various kitchens or officers' quarters to the incinerating plant where the cans are emptied and cleansed before being returned. The location of the can wash equipment at the incinerator also admits of much better inspection and insures the cleansing and sterilizing of the cans at all times, as it is not possible to do this work where the washing is entrusted to the help around kitchens.

FORT SNELLING INCINERATOR, \$8,000.

1. Fort Snelling has accommodations for a permanent garrison of 1,386 officers and men, and temporary quarters for 9,021 officers and men or a total garrison of 10,407 officers and men. This post has never had an incinerator to cremate the garbage or waste products, but have used several open-type or kitchen incinerators. There is no equipment whatever for mechanical washing and sterilizing of garbage cans, and the present methods of doing this work are unsatisfactory and expensive. This office strongly recommends the installation of a United States standard incinerator of suitable size, and a garbage can wash equipment, together with a permanent structure to house both the incinerator and the can wash equipment.

2. Experience has shown that the most economical method of disposing of waste products and of cleansing and sterilizing garbage cans is to locate the can wash equipment at the incinerating plant where the hot water required can be furnished by the heat from the incinerator without cost other than the original cost of installation, and where the work of cleansing and sterilizing the cans can be done by the same force in charge of the operation of the plant. The building to house incinerator and can wash equipment as now planned provides a loading and unloading platform, and all garbage cans are brought direct from the various kitchens or officers' quarters to the incinerating plant where the cans are emptied and cleansed before being returned. The location of the can wash equipment at the incinerator also admits of much better inspection and insures the cleansing and sterilizing of the cans at all times, as it is not possible to do this work where the washing is entrusted to the help around kitchens.

FORT SLOCUM BAKERY (R. S.), \$18,925.

1. The present bakery on this post is located in the basement of the permanent mess hall. It was installed about eight years ago, was enlarged about four years ago, but is at present of insufficient size to furnish the required amount of bread because of the increase in the number of troops in the post has been far greater than the increase in capacity of the bakery. It is proposed to construct a new bakery building, modern and sanitary in every way, and of capacity sufficient to meet all requirements that may be made upon it.

2. Sanitary inspectors have frequently submitted adverse reports on this bakery because it was placed in a basement, was dark and insanitary and insufficient in size for the amount of work necessary at the post. Emphasis has been laid upon the fact that because of its location it is impossible to put the present bakery in a desirable and sanitary condition.

3. The increase in size of the bakery is very necessary because Fort Slocum is a recruit depot, thus the number of troops in its varies greatly and can not be foreseen. It is necessary that a bakery in this post be of sufficient capacity to meet any demands that may be made upon it by the maximum number of troops capable of being quartered here.

4. It is considered necessary that Fort Slocum be given a new modern, sanitary bakery during the coming year.

FORT SLOCUM LAUNDRY, \$44,950.

1. The project for this laundry originated on October 28, 1918, in a letter from the commanding officer to the Adjutant General of the Army, in which he requested authority to build a new sanitary laundry from post exchange funds and to install machinery from the same funds, which were available. This proposal was finally disapproved by the Secretary of War on the grounds that if a modern laundry is necessary and is to be established at a post to replace existing facilities it should be paid for from "General appropriations, Quartermaster Corps."

2. The present laundry building was erected in 1881 at a cost of \$1,650 with a capacity for 1,000 men. Since the building of the original laundry the capacity of Fort Slocum has been increased to 5,000 men without any alteration to original building. It is impossible to make this building serviceable or sanitary. It is in a dilapidated condition and there is not room enough. The building has been condemned frequently, and is considered a very dangerous fire hazard. Every inspector general visiting the post has called attention to the laundry and recommended that the post be given a new one.

3. Fort Slocum is located on an island in Long Island Sound, outside of the city limits and therefore entirely removed from any laundry facilities in the city. It must have its own laundry. In addition Fort Slocum is a recruit depot. The personnel changes very frequently, therefore, all bedding and other equipment which may be issued to one man must, before it can be reissued to another man, be thoroughly sterilized. A laundry furnishes an approved method for sterilizing these articles.

4. It is proposed to erect at this post a modern, sanitary laundry which will be of size sufficient to care for the ordinary expansion of the post for a number of years to come.

5. Fort Slocum is a recruit depot and is, therefore, subject to very great changes in personnel. It must have facilities elastic enough and of sufficient size to care for from a small number of men up to the capacity of the post, or 5,000 men. The present laundry in addition to being inadequate for the average number of men on the post, insanitary and a dangerous fire hazard, can not do this. It is absolutely necessary that Fort Slocum be given a modern and sanitary laundry which will meet all requirements that may be made upon it.

FORT SLOCUM, REBUILDING OF NEPTUNE WHARF (R. W. W. & D.), \$48,550.

1. Fort Slocum, N. Y., is reached by Government ferries running from Neptune Dock, New Rochelle, N. Y., to Fort Slocum (Davids Island), N. Y. For a number of years the Government has rented Neptune Dock from a firm in New Rochelle for \$3,000 per year. This dock was built about 30 years ago and is of wood and pile construction. The bearing piles, caps, ranges, etc., are in a badly deteriorated condition and will not stand any load or strain. The fender piles have become so badly worn and the wharf as a whole so badly wrecked that the steamers *General Stanton* and *General D. S. Stanley*, which are rather heavy vessels, have considerable difficulty in making a landing. Repeated efforts are being made to repair the wharf, but at best these repairs are only temporary and soon are undone because of the strain caused by the landing of these steamers.

2. In January, 1919, the condition of this wharf was so bad that negotiations were entered into with the owners for its repair. This they agreed to do, but demanded \$8,000 annual rental, the \$5,000 increase to reimburse them for the expenditure necessary to place the dock in good condition. It was decided at that time that it would be to the best interests of the Government to purchase the dock and make the necessary repairs themselves. This was done at a cost of \$45,000.

3. This office sent an experienced engineer to Fort Slocum to investigate and report upon the work actually necessary. His report rendered on August 15, 1919, showed that Neptune Wharf is in such bad condition that entire rebuilding is necessary. The piling, caps, braces, etc., are so badly rotted that fastenings will not hold, and the entire structure is in danger of collapse. Sufficient pile penetration can not be secured at this place to make a narrow structure stable because of the rocky bottom. In addition the wharf is entirely too small to accommodate the business of the post and the buildings are dilapidated and lack the necessary sanitary equipment, waiting and guard rooms.

4. It is necessary, therefore, in rebuilding the wharf to make it 80 feet in width, with provisions on the wharf for waiting room, guardroom, and the proper heating and sanitary equipment. This project is approved by the commanding general, Eastern Department, in indorsement on March 18, 1919. The condition of the wharf is so bad that there is danger of the Government losing the entire original investment through collapse of the wharf. It is therefore imperatively necessary that the money for the required rebuilding of this wharf be made available this year.

WASHINGTON BARRACKS, OFFICERS' QUARTERS (B. & Q., \$1,050,000; R. S., \$215,000; W. & S., \$85,000).

1. It is proposed to construct at Washington Barracks quarters for 96 families for the use of officers detailed to the Army War College. The sum requested is the minimum required to construct quarters similar in architecture and class of construction to those now on the post.

2. The present plans of the War Department for maintaining the efficiency of the Army and providing for the gradual advance of training, efficiency, and equipment necessary to maintain our Army in its present high standing compared with the other armies of the world, provides for a progressive series of schools of which the Army War College is the highest. Officers will first be detailed to Camp Benning, Ga., and later to the service schools at Fort Leavenworth, Kans., or to the Field Artillery School at Camp Taylor, Ky., and then the Field Artillery School at Fort Sill, Okla., and will be required to serve with troops a period of years between attending these schools. Those who have completed these courses and whose service and efficiency is of the highest standard will then be detailed to the General Staff College, thus the General Staff College is the place where the most efficient officers will be trained for positions of the higher command in our Army. It is probably the most important link in the chain of schools.

3. There are at present on duty at the Army War College 84 officers, ranging in rank from first lieutenants to colonels, who draw commutation for quarters because there are no quarters available for them on the post. Based upon the present amount paid according to rank, these officers draw a total of \$100,510.40. There are also six other officers in rank from first lieutenants to colonels who are on other duty at the post and for whom no quarters are available, who draw a commutation of \$5,668.20, making a total commutation drawn for these officers of \$106,178.60 a year. In addition to the above there are 26 officers who are occupying quarters in an old hospital building built before the Civil War and which was long ago designated as noncommissioned officers' quarters, because they preferred to use these unsuitable quarters and be on the post rather than live in Washington and pay rents demanded there. It is expected that hereafter officers will not be permitted to live in these quarters, because of their unsuitability. This will make 26 additional officers who will draw \$25,453.80 commutation for quarters each year; thus the total commutation of quarters which will be paid to officers on duty at the Army War College, for whom no quarters are available, \$131,632.40.

4. The expense to the Government of having these officers quartered outside the post is not the only one. The officers themselves must find quarters in Washington and pay the exorbitant rents demanded in the city. In every case these rents are far higher than the officers can afford to pay. It is impossible to determine how much they are forced to pay in excess of their allowance for commutation for the quarters they occupy in this city. However, anyone familiar with rents in Washington knows how impossible it is to obtain quarters there for \$12 per month per room, which is the allowance given officers.

5. A disadvantage just as serious as the expense is the distance these officers live from their work. The fact that they must live scattered over a large city entirely removes them from contact with each other, except during the hours when actually on duty. This in itself is a serious setback. To have them quartered on the post, where they will be in an atmosphere far different from that of the city and far more helpful to their work, and where they will associate and discuss questions informally and not during the regular school hours, is not only highly desirable but it is believed will increase the value of the school, both to the officers and to the country.

6. From the economic standpoint, when it is considered that the Government will pay officers on duty at the War College in 10 years in commutation for quarters alone the amount it would cost to erect suitable quarters on the post, and from the point of view of increased efficiency of the officers on duty at the school, either of which taken alone is sufficient to warrant the expenditure for these quarters, it is considered highly important that they be erected at once. To delay only one year is unjustifiable, as it means spending \$131,632.40 of the people's money when it might be avoided.

CAMPS BEACON, EL CAMPO, AND HEARN.

	B. & Q.	R. S.	W. & S.
Camp Beacon.....	\$37,050	\$6,800	\$1,250
El Campo.....	5,650	1,590	503
Camp Hearn.....	23,130	6,896	3,812

TEMPORARY QUARTERS.

1. These camps are all located on the southern California border. It is proposed to construct temporary shelters for officers, men, and animals. These sums requested are the minimum required to construct buildings sufficient to accommodate the

present personnel and equipment in these camps. Troops in all these camps are living in tents. At Camp Hearn there is no shelter whatever for animals, while at El Campo there is shelter for only 30 animals out of the total of 113 animals.

2. At all of these stations climatic conditions render it extremely advisable to have both men and animals properly housed in temporary buildings. This applies particularly to Camp Beacon at Calexico where the extreme summer temperature makes it imperative that the men be housed in buildings with adobe walls, and not in tents as heretofore. The saving on tentage alone would go far toward paying the cost of these temporary buildings as the life of tentage in this climate is very short. The health and comfort of the commands will be greatly improved. To keep men in tents at Camp Beacon where the temperature for days at a time is often over 100° F. is entirely unjustifiable; for example, when Brig. Gen. R. C. Marshall, jr., inspected Camp Beacon the temperature was 112°.

3. Because of the climate it is necessary that buildings at these posts be placed on concrete or brick pillars 30 inches from the ground, and that the roofs extend over the side walls about 4 feet to afford protection from the heat. There should also be ventilating space of about 2 feet, covered with wire screening, under the eaves of the roofs. This affords ventilation and protects the men from flies and mosquitoes which are abundant for a long period in this climate. At Camp Beacon the temperature is so high that it is considered necessary to use adobe construction for barracks and quarters.

4. These camps are all located in a country where the summer is long and extremely hot. Flies and mosquitoes abound for a long period. The conditions are such as to cause real suffering. To force men to live in tents under such conditions is extremely unjust, but because of the necessity of the border patrol troops must be kept at these places. It is therefore considered of the utmost importance that this money, necessary to give troops in these camps habitable quarters, be appropriated.

Garrisons at camps as follows: Camp Beacon, Troops B, C, and Machine Gun Troop, Eleventh Cavalry, 12 officers, 19 men; Camp Hearn, Troops I, L, and M, Eleventh Cavalry, 10 officers, 189 men; Camp El Campo, Troop K, Eleventh Cavalry, 1 officer, 30 men.

Distances between above camps: From Camp Beacon to Camp Hearn, 70 miles; from Camp Beacon to El Campo, 10 miles; from Camp El Campo to Camp Hearn, 80 miles.

SCHOFIELD BARRACKS, ICE PLANT (R. S.), \$52,230.

In connection with the continuation of the construction program in the Island of Oahu it is necessary to consider the provision of refrigerating and ice-making facilities to protect the food supply and incidentally, the health of the garrisons at the various posts. It is necessary that there be provided at Schofield Barracks a combined ice and cold storage plant as described in "Hawaiian Department refrigerating plants" and for this purpose the sum of \$52,230 has been included in the item "Regular supplies" in the Army appropriation bill. In conjunction with this plant, a second plant must be provided in the city of Honolulu. This second plant is estimated to cost \$165,270, and will be designed to take care of the needs of all the posts on the island, except Schofield Barracks. In order that there may be as much flexibility as possible in the expenditure of funds, it is desired that any savings that may be made in carrying out the regular program of construction work at Schofield Barracks may be available if necessary for work in connection with this refrigerating and ice-making program.

HAWAIIAN DEPARTMENT, REFRIGERATING PLANTS.

1. At the present time the Government owns no refrigerating or ice-making plants in the Hawaiian Islands except one now under construction at Fort Kamehameha, intended to take care of the needs of that post alone. Ice is purchased from the Hawaiian Electric Co. for the use of both the mobile Army and Coast Artillery posts. Cold-storage space for butter, eggs, and other small subsistence supplies imported from the United States is rented from the same company. Practically all the fresh beef purchased is raised on the Island of Hawaii, brought alive to Honolulu, and slaughtered and frozen there. Government deliveries are made direct from the cold-storage plant to the different posts as required.

2. For Schofield Barracks the beef and other perishable subsistence supplies are delivered by rail in insulated cars. The ice for the use of the post is shipped with the other supplies, and is relied on to maintain the proper temperature in the cars. This results in the waste of approximately 20 per cent of the ice. For use in the immediate vicinity of Honolulu beef is shipped with the post ice supply by trucks.

3. Pressing requests have been received from the local authorities for the establishment of refrigerating and ice-making plants on the Island of Oahu to provide

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or the storage of a three-months' supply of fresh beef and other perishable subsistence, and for the making of ice for the use of the garrison in and about Honolulu and at Schofield Barracks. It has been suggested that this plant be located at Schofield Barracks because a large proportion of the island garrison will be stationed there.

This is not, in the opinion of this office, a satisfactory location, in so much as supplies in general are stored, not at Schofield Barracks, but in the vicinity of the transport docks in the city of Honolulu, and it is believed that this same policy should be adopted in locating the cold-storage plant, as it is much more reasonable to distribute these supplies from their point of receipt than it is to ship them to Schofield Barracks and from there return them to the various posts adjacent to the point where they were originally received. The supply of refrigerating capacity capable of storing a three-months' supply of fresh beef is not believed to be necessary nor even reasonable in the light of the experience just had in the handling of the fresh beef supply in France for the use of the American Expeditionary Forces, where at no time was there more than one month's supply on hand. Therefore, the plant contemplated provides for one month's beef only.

4. In connection with the cold-storage plant in Honolulu there must be provided an ice-making plant of 23 tons daily capacity to supply the needs of the garrison at Fort Armstrong, De Russy, Ruger, and Shafter. To provide for the storage of 30 days' supply of fresh beef and other perishable subsistence, and to make 25 tons of ice daily, will require a building approximately 100 by 220 feet in size and one story high, this building to be constructed so that in the event that additional cold-storage space is later needed, two more stories can be added to a section of the building covering an area of 100 by 140 feet.

5. It has been proposed to convert an old warehouse now standing on Government-owned land for this purpose, but this proposition can not be considered, as the building is too small and the walls are not sufficiently substantial to carry the required load, while the plan is such that a proper layout in bays of 20 feet square to accommodate beef trolley rails to the best advantage can not be had.

6. No surplus refrigerating machinery is available in this country for installation in this plant.

7. It is estimated that the cost of this plant will be as follows: Building, \$95,600; insulation, \$26,520; machinery, \$43,150; total, \$165,270.

8. In order to handle supplies economically and to provide for any temporary shortage or any breakdown in transportation, it is necessary that there be provided at Schofield Barracks a cold storage and ice-making plant sufficient to store one week's supply of subsistence stores and to make the necessary ice for the garrison as the shipment of ice from Honolulu has been found to be extremely wasteful. It is expected that this plant will have ultimately a capacity of 40 tons of ice daily, but at present it is contemplated to install the equipment for the production of only 25 tons and to add additional equipment when the garrison reaches full strength.

9. The machinery installed at Camp Hancock has been transferred to Schofield Barracks for installation in this plant and it is necessary therefore to provide only for the necessary building and insulation and funds for this building to complete this project.

10. The cost is estimated as follows: Building, \$36,750; insulation, \$9,480; installation of machinery, \$6,000; total, \$52,230.

11. No saving in expense of operation can be expected from the installation of Government cold-storage plants in the Hawaiian Islands, except the amount now paid for the hire of three cold-storage rooms from the Hawaiian Electric Co., aggregating 12,680 cubic feet, at an annual cost of \$3,600. The object in establishing these plants is to make possible the carrying of a reserve supply to protect the troops in case of emergency. Investment in this cold storage therefore must be considered as a military necessity and not from a commercial viewpoint in determining its investment value.

12. Assuming, for the purposes of this statement, that the garrison to be eventually stationed on the Island of Oahu will be 25,000 men, they will consume 12,500 tons of ice per year; it is estimated that this ice can be made in the plants, which it is proposed to construct at a cost not to exceed \$3.62 per ton as compared with the price now charged of from \$5.50 to \$6 per ton. This represents a saving of from \$1.88 to \$2.38 per ton and would indicate an annual saving of approximately \$25,000.

13. The estimate for the cold-storage and ice plants at Honolulu and at Schofield Barracks total \$217,500, of which amount \$58,000 is for ice-making equipment as distinct from the cold-storage feature which totals \$159,000. Through the construction of the ice-making feature a saving of \$25,000 can be made, while on the cold-storage feature the saving will be \$3,000, a total of \$28,000. This saving is figured in connection with the two types of service is apparently very disproportionate, but it must be borne in mind that without the combination of the cold-storage facilities with the ice-

making plants the cost of the ice-making plants would be decidedly enhanced. In other words, that the saving is due indirectly, but nevertheless in part to the fact that the cold-storage plants are to be built. The saving of \$28,900 is a little less than 13 per cent on the total amount of expenditure. The further fact must be kept in mind that the cold-storage facilities now provided through rental are only for the handling of perishable supplies, such as butter, chickens, eggs, and fruit brought from the United States, and are not used for carrying a reserve supply of beef, the main object to be achieved by the construction of these plants.

FORD ISLAND—JOINT ARMY AND NAVY WATER SUPPLY SYSTEM FOR FORD ISLAND, PEARL HARBOR NAVAL STATION, FORT KAMEHAMEHA, AND BARBER'S POINT (W. & S.), \$160,000.

1. This proposed water-supply system consists of two 12-inch artesian wells to be drilled on McGres's Peninsula, each of which will deliver about 1,000,000 gallons daily. A 16-inch gravity line will conduct the water across the east lock to a pumping station on Ford Island, which is now being developed. A 12-inch pressure line will extend across the island and be laid under water to the naval station. There connection will be made to the present 250,000-gallon water tower by an 8-inch main, and by another 8-inch main connection will be made to the existing 8-inch line from Fort Shafter to Fort Kamehameha. From this existing line there will be a 54,000-foot extension of 4-inch pipe to Barber's Point, and the Puuloa Naval Reservation. A 9,000-foot 2-inch extension from the existing Fort Shafter line will be made to take care of the Ahua Point Battery already nearing completion.

2. The present supply from Monalua Park under normal conditions is inadequate, and as soon as additional troops are stationed at Fort Shafter the shortage will be even more serious, while the present supply of Fort Kamehameha is barely sufficient for its needs. The addition of the Puuloa or Barber's Point defensive area and the aero station and defensive works on Ford Island will call for a supply of water greater than the capacity of the present system, which is not capable of the required expansion.

3. The main advantages of the proposed system are:

- (a) Provision of an ample supply of water to all points requiring it.
- (b) Importance of having practically all of the pipe lines on Government property and so reduce the amounts to be closely guarded.
- (c) This supply system is in no sense temporary but a permanent improvement.
- (d) No matter what might happen to the existing Fort Shafter-Fort Kamehameha supply line in war times the supply to Ford Island Naval Station, Fort Kamehameha, Barber's Point, and Ahua Point will remain intact due to the cross connection into same from the proposed line.
- (e) This project is not liable to injury by enemies during an emergency and for that reason alone is of value.

4. The sum requested represents the Army's part of the expense of this joint project. In order that this scheme may be carried out it is necessary that both the Army and Navy be authorized to spend the required amounts.

The CHAIRMAN. The first item you have here is \$35,000 for a shop for salvage service at Alcatraz Island, Calif. What is the nature of that?

Gen. MARSHALL. On Alcatraz Island they have the prisoners.

The CHAIRMAN. The disciplinary barracks prisoners?

Gen. MARSHALL. Yes; the disciplinary barracks prisoners. These are men charged with light crimes, and one of the principal features of the reconstruction work there is their vocational training. The local authorities in charge of that, and the Adjutant General's office in charge of it, state that that is an item that is very necessary for the proper training of these prisoners. They now are located in temporary shacks, and they can only operate to less than half of the desired capacity.

Mr. MCKENZIE. How many prisoners are there?

Gen. MARSHALL. There are 425 prisoners there at this time.

The CHAIRMAN. What kind of salvage does this refer to?

Gen. MARSHALL. Clothing, shoe and hat repair shops, laundries and cleaning plants are the principal industries.

The CHAIRMAN. They do all the salvage work for the soldiers on the coast out there?

Gen. MARSHALL. Yes, sir. This project is self-supporting. In other words, the returns as they figure it makes the plant entirely self-supporting.

The CHAIRMAN. The next item is for \$404,256 for motor training buildings at Fort Leavenworth, Kans.

Gen. MARSHALL. That was submitted last year, and when the appropriation bill was in the Senate Mr. Curtis, of Kansas, stated as follows:

Mr. CURTIS. I desire to ask the chairman a question with reference to an item which was sent up by the War Department. It asks for an appropriation of \$383,000 for the building of a mechanical repair shop at Fort Leavenworth, Kans. I ask the chairman if the item requested by the department can be taken care of out of the lump sum appropriation for barracks and quarters, water supply, etc.

Mr. WADSWORTH. It is my opinion that it can be taken care of out of the items for barracks and quarters, water, sewers, roads, walks, and drainage.

It was intended that it should be done, but it was overlooked, that the law making the limit of \$20,000 interfered with this construction.

At that time the prison at Leavenworth had over 3,000 men in it. It was contemplated that this should be constructed with prison labor, with the exception of hiring such men as foremen, etc. The number of prisoners at Leavenworth has so much decreased that I doubt very much whether prison labor will be available for it to such a material extent as was expected at that time. Similarly, at that time we had a great mass of material on hand that could have been used in construction. That is materially decreased.

Mr. MCKENZIE. Has not the price of such material increased over what it was a year ago?

Gen. MARSHALL. Yes.

The CHAIRMAN. You are asking for \$404,256, whereas last year you estimated that it could be gotten for \$383,000.

Gen. MARSHALL. Yes, sir. The total cost of the plant is over \$800,000. Whether we will be able to construct the entire plant with the \$404,000 depends entirely upon whether we have the surplus material and also on how much prison labor we can get. If we can get the full amount of prison labor and the full amount of material we expect to get it will be constructed within that amount. I do not want to leave the committee under any false impression with respect to it, so I am making the statement that the cost of the entire plant is about \$840,000. We hope to be able to get prison labor and salvage material, but the prison labor is less than half what it was a year ago, and therefore I hazard it as my own judgment that we will not be able to get as much as we had expected to get before.

The CHAIRMAN. Do you contemplate training the prisoners in running motors, and also taking apart motors?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Vocational training?

Gen. MARSHALL. It will be used for vocational training, and the Motor Transport Corps as far as it goes states that it is necessary for the economic repair of the motor vehicles in that locality that these men serve in that motor repair shop, so that that will serve the double purpose of giving them vocational training—that is, giving

the men in the disciplinary barracks vocational training—where an effort is being made to reconstruct them and make them fit to enter civil life again, and it will also enable the Government to have that work done more economically.

The CHAIRMAN. Your next item is for \$32,700 for swimming pool at the United States Disciplinary Barracks, Fort Leavenworth, Kans.

Gen. MARSHALL. When the Secretary of War was at Fort Leavenworth, the question of constructing a swimming pool there was determined upon, and it had the personal approval of the Secretary and is included in the estimates as a desirable element for the disciplinary barracks at Fort Leavenworth. I presume the committee is familiar with what the Army has in the way of disciplinary barracks there.

The CHAIRMAN. Yes. Your next item is for \$727,462 for officers' quarters to accommodate 50 officers' families at Fort Leavenworth, Kans.

Gen. MARSHALL. In that connection I have not stated to the committee before, but I will take occasion to state it now, that the \$727,462 is put under the item of barracks and quarters to get authority in law for \$727,462, and that only \$531,462 will come out of the appropriation for barracks and quarters, \$82,000 out of the appropriation for regular supplies, and \$112,600 will come out of the appropriation for water and sewers.

Mr. MCKENZIE. Have you a statement you can put in the hearing in connection with that item, and each of the other items?

Gen. MARSHALL. Yes, sir; I have. At Leavenworth we have old barracks that are not fit for the men and their families to live in; they have to go to a common mess with their families; they have no cooking facilities for any of these people, and it is generally a very bad condition. If you could listen to those men talk you would realize, I am sure, that it is largely because of the living conditions they are under that there is a lack of morale.

The CHAIRMAN. They have to live in shacks in all the National Army camps, too.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. The situation, of course, is similar practically everywhere throughout the country at the big cantonments and camps, is it not?

Gen. MARSHALL. But this is a place where school duties are very important.

Mr. MCKENZIE. You are a business man, general, and you may be living in a particular kind of home, but you would like to have a better one, and you have the money to build a better one. I would like to ask you, whether or not, if you could possibly get along with your modest home you have now, you would undertake to build a new one at this time?

Gen. MARSHALL. I do not believe I would.

Mr. MCKENZIE. That is the same position the Government is in.

Gen. MARSHALL. The same thing applies with respect to the non-commissioned officers at Fort Leavenworth. The commanding general, with respect to the noncommissioned officers states that they have to live down town in Leavenworth now, and their families have to live down town; because there is no place for them on the Government reservation. There is no place for their families on

the post, and the authorities there ask for the construction of quarters for them.

Mr. FIELDS. I notice you estimate for \$727,000 for officers' quarters to accommodate 50 families. That would be \$14,500 for a family. That is a pretty expensive residence, is it not?

Gen. MARSHALL. You can not build much of a house for \$14,000 nowadays. You can build about the same kind of a house that you could build for \$7,000 before the war.

Mr. FIELDS. By building them together it would seem that the building might be done on a cheaper scale than \$14,500 for each officer's family.

Gen. MARSHALL. The only answer I can make to that is that that is what the buildings will cost that will give the accommodations which I just showed you awhile ago. They are apartment house accommodations and not separate buildings.

The CHAIRMAN. Do you think the cost of construction during this coming fiscal year will be as high as it has been in this fiscal year?

Gen. MARSHALL. Yes; I think it will be. I think another year will roll around before any fall in cost will come.

The CHAIRMAN. Will you kindly finish the three remaining items under barracks and quarters?

Gen. MARSHALL. The principal one is for officers' quarters at the Army General Staff College.

The CHAIRMAN. That is at Washington Barracks?

Gen. MARSHALL. Yes, sir. That item is for \$1,350,000 for officers' quarters to accommodate 96 families at the Army General Staff College, Washington Barracks.

The CHAIRMAN. Why do you propose to increase the officers' accommodations there?

Gen. MARSHALL. That is at the Army General Staff College. The student officers at the General Staff College live around in the town in Washington wherever they can find a place. It is quite a long distance down there, and one of the fundamental ideas in having the Staff College there is that they shall have the officers together, not only that they shall be there during the actual business hours when they are in attendance on lectures or studies, but that they may be there right along, associated together after the work in the college for the discussion of the things they have to study.

Mr. MCKENZIE. Of what grades are most of the officers attending this college?

Gen. MARSHALL. Those who are there now run from first lieutenant to colonel. I think most of them are of field grades.

The CHAIRMAN. During the war practically all of the men held field rank?

Gen. MARSHALL. I mean now. That is the highest school in the educational system that we have, and it seems to me that those quarters are needed there.

Mr. MCKENZIE. What I have in mind is this. These officers come here to attend that school, and they would be entitled to commutation of quarters. If they were of sufficient grade so that the commutation would cover the rental of their apartments, the only way they would be penalized would be that they would have to walk or ride on the crowded street cars here, which would be an inconvenience, and it is an inconvenience to all of us. The only thing I had in mind in that was whether they would come out anywhere near whole.

Gen. MARSHALL. That commutation item, according to the present permanent grades of officers assigned there, is \$131,632 a year. That is the commutation item that is being paid those officers now.

Mr. McKENZIE. That would be the interest on a very large sum of money. But it is a question of the total large cost of construction that we have to keep in mind at this time.

Gen. MARSHALL. That is true enough. The present cost of construction is not going back within a reasonable time to where it was before. It is going back some, but how much none of us can foresee.

The CHAIRMAN. Will you explain the next two items under "Barracks and quarters"? The first one is \$45,100 for temporary barrack building and officers' quarters at Camp Beacon, Calif., and the other one is for \$33,838 for temporary barrack building and officers' quarters at Camp Hearn, Calif.

Gen. MARSHALL. Those two camps are along the Mexican border in California, at places where the troops suffer inconvenience due to the very unusual weather conditions that prevail at those places. The temperature goes up as high as 112 or 114 degrees and the humidity is very high. They are living in tents, with no comforts or accommodations whatsoever.

The CHAIRMAN. How many troops and officers are down there?

Gen. MARSHALL. I do not know exactly, but I think there are two companies at each place—about 500 men at each place.

The CHAIRMAN. I see you contemplate building temporary barracks?

Gen. MARSHALL. Absolutely.

The CHAIRMAN. Would it not be cheaper to build them of adobe down there?

Gen. MARSHALL. Not in those particular places.

The CHAIRMAN. Would they not be better?

Gen. MARSHALL. We are building of adobe where we can do it at the same low cost as we can build of wood. We are doing that wherever we can do it along the Mexican border. But in these particular places we are estimating the cost of cantonment construction, with concrete posts and a shingle roof. If the funds are available, we determine whether this can be done or whether it is cheaper to use adobe.

The CHAIRMAN. Adobe is much cooler than the ordinary cantonment construction.

Gen. MARSHALL. It is, and very much more suitable to that climate, and if it can be done it will be done. At a great many places along the Mexican border we are constructing with adobe.

The CHAIRMAN. How many miles are those two places apart?

Gen. MARSHALL. One is at San Diego and the other I think is about 70 miles away.

The CHAIRMAN. You can put the exact figures about that in the hearings.

GARRISONS AT CAMPS BEACON, EL CAMPO, AND HEARN.

At Camp Beacon, Troops B, C, and Machine Gun Troop, Eleventh Cavalry, 12 officers, 190 men.

At Camp Hearn, Troops I, L, and M, Eleventh Cavalry, 10 officers, 189 men.

At El Campo, Troop K, Eleventh Cavalry, 1 officer, 30 men.

The distances between these camps are: From Camp Beacon to Camp Hearn, 70 miles; from Camp Beacon to El Campo, 10 miles; from Camp Hearn to El Campo, 80 miles.

The CHAIRMAN. Now, Gen. Marshall, I think the next item is, "Military post exchanges," on page 36.

Gen. MARSHALL. The appropriation for regular supplies.

The CHAIRMAN. Does that come ahead of it?

Gen. LORD. That is on page 22. The items carried on the sheet will be found on page 25.

Gen. MARSHALL. The items that are now in the committee's draft are to be eliminated and the items on this sheet to be substituted.

The CHAIRMAN. I see.

Gen. MARSHALL. The first one is for the ice plant at Camp Dodge, \$20,000.

The CHAIRMAN. That is on the small sheet, is it not?

Gen. MARSHALL. On the small sheet; yes, sir.

Mr. McKENZIE. Do you think you need that ice plant out there, General?

Gen. MARSHALL. If Camp Dodge is to be continued; if not, nothing should be done. The ice cost at Camp Dodge is \$6.42 a ton. The ice plant would make it at not more than \$2.50 a ton, a saving per year of \$7,840. The plant will pay for itself in three years.

The CHAIRMAN. The next item is for a laundry at Camp Dodge.

Gen. MARSHALL. There are four laundries, all told, but the remarks I make about one of them will pertain practically to all. The laundries will pay for themselves in a year, so that there can not be any question about the wisdom of constructing them, if you are going to keep the place going. If you are not going to keep it going, then, of course, they should not be constructed, but the history of all laundries is that they more than pay for themselves in a year.

The CHAIRMAN. You ask for \$160,000 each for three of them, and then you ask for \$65,000 for one at Camp Knox?

Gen. MARSHALL. That would be a small one.

The CHAIRMAN. And \$44,950 for one at Fort Slocum, N. Y.

Gen. MARSHALL. Yes, sir; it depends upon the capacity of the laundry.

The CHAIRMAN. How many men can be cared for if we appropriate \$160,000 for the laundry at Camp Dodge?

Gen. MARSHALL. By working about 24 hours a day, they could care for over 40,000 men, but we do not contemplate working but one shift, when it would be able to care for about 17,000.

The CHAIRMAN. How many men are there now?

Gen. MARSHALL. At Camp Dodge?

The CHAIRMAN. Yes.

Gen. MARSHALL. I do not know, sir; a very small number, I think.

The CHAIRMAN. Do you think it is necessary to put up a plant that can care for this great number of men?

Mr. FIELDS. What is the capacity of the plant?

Gen. MARSHALL. Seventeen thousand is what they desire, on an eight-hour shift.

Mr. FIELDS. How many men will Camp Dodge accommodate?

Gen. MARSHALL. Camp Dodge will accommodate, on the war-time basis, about 45,000 men, 500 cubic feet per man; on the basis of 700 cubic feet per man, about 32,000.

Mr. FIELDS. How many do you contemplate caring for at Camp Knox?

Gen. MARSHALL. At Camp Knox, about 12,000, I think.

Mr. McKENZIE. General, at these various camps what is the construction of the laundries? Are they not of a little better character and more durable or substantial than the temporary buildings or officers' quarters, etc.?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. Are not those buildings in such condition that they will last for a few years with some repair?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. That being true, do you think it would be advisable for Congress to make an appropriation for permanent laundries until, as you say, it has been definitely decided which of these camps we are going to make permanent camps? Would not that be good business judgment?

Gen. MARSHALL. Well, if they are going to be occupied at normal capacity for one year, it will be advisable to build them, because they will more than pay for themselves. The Government is now doing the laundering for the soldiers. It either does it in its own laundries or it pays for it at contract prices. At Camp Dix, had the laundry been let at contract prices rather than done in the laundry, it would have cost the Government \$666,000 more for one year at the contract price prevailing there.

Mr. McKENZIE. I do not know about all of these camps, but in some of them I know they have concrete floors in these laundries, do they not?

Gen. MARSHALL. All of them.

Mr. McKENZIE. And the machinery is set up on a solid, stable foundation?

Gen. MARSHALL. Yes.

Mr. McKENZIE. And the buildings look as though they were——

Gen. MARSHALL. They are there to stay.

Mr. McKENZIE. They are good buildings?

Gen. MARSHALL. Yes.

Mr. McKENZIE. And perhaps the roof might need some repair?

Gen. MARSHALL. They have got good roofs on them.

Mr. McKENZIE. Outside of that, it would strike me that the laundries at these camps would be sufficient.

Gen. MARSHALL. There is no laundry at these camps; there is no laundry at these particular camps.

The CHAIRMAN. That is all new construction?

Gen. MARSHALL. Yes; at these camps involved there is no laundry.

The CHAIRMAN. In regard to this storage plant at Schofield Barracks, of course, that is a permanent camp in Hawaii, for which you are asking \$52,230 for an ice and cold storage plant.

Gen. MARSHALL. They have no ice or refrigerating facilities at Schofield Barracks; they have to purchase it. This plant ice, it is figured, will furnish ice for the different places, as well as cold storage for perishable supplies, and at a very much lower rate than they can get it commercially.

The CHAIRMAN. You have to send out from Honolulu now, which is about 12 miles?

Gen. MARSHALL. Yes, a distance of 27 miles, and we lose 20 per cent of the ice between Honolulu and the post. We have to buy it in Honolulu at the rate in Honolulu. It is a question of economy.

If I were exercising any particular judgment between those, I would say that Schofield Barracks, Slocum, Knox, and Lewis are the places which we can, I believe, feel fairly well assured will be continued. I think Camp Lewis in the northwest will be retained, whatever the eventual military policy might be.

The CHAIRMAN. Lewis, of course, has been given to the Government.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. The Government owns that tract of land outright?

Gen. MARSHALL. Yes, sir; and I would like to see go forward there the construction of permanent quarters along the line that I talked of to the committee this morning.

The CHAIRMAN. Well, we will go on to the next item, "Water and sewers."

Mr. McKENZIE. You have a statement, I believe, General, in connection with each of these?

Gen. MARSHALL. In connection with each one of these I have a statement that I will put in the record. I have got it in this book, and I will put it in the record.

Gen. LORD. "Water and sewers" begins on page 30 and ends on page 31.

The CHAIRMAN. I understand that of the incidental expenses, which is the next item in the tentative print of the bill, you expect to use \$3,000,000 out of the \$24,000,000?

Gen. MARSHALL. No, sir; I have not included anything in there except a very small item, \$23,000, which was included for flag poles, buzzers, electric fans, and one or two things of that description. There is nothing in that appropriation that was in there last year, and instead of putting it in that appropriation, it was placed in the appropriation for "Barracks and quarters."

The CHAIRMAN. That is included, then, in the \$13,000,000 item for "Barracks and quarters?"

Gen. MARSHALL. Yes.

The CHAIRMAN. Where is the water and sewers item?

Gen. LORD. On page 30 and ending on page 31.

Gen. MARSHALL. But eliminating any items that might be specified there, and substituting \$160,000 for water-supply system at Fort Leavenworth, Kans.

The CHAIRMAN. Fort Leavenworth?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. Cut everything out and put that in, is that it? Cut everything else out?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. That is \$160,000?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. As against \$7,000,000?

The CHAIRMAN. No; the \$7,000,000 covers water and sewers for all the camps.

Mr. FIELDS. What do you want to cut out, then?

Gen. LORD. Cut out all the specific items after the word "provided."

The CHAIRMAN. From line 9 cut out the language and insert \$160,000 for water supply system at Fort Leavenworth, Kans. Where does Fort Leavenworth, Kans., get its water at the present time?

Gen. MARSHALL. It gets its water from the city of Leavenworth.

The CHAIRMAN. Do you purpose developing your own system at the Fort?

Gen. MARSHALL. No, sir. The necessity for this arises from the fact that Leavenworth has been added to from time to time, and the mains of Fort Leavenworth have not been increased, and there has been no storage capacity provided, and the consequence is that the pressure is insufficient for ordinary purposes at many times during the day, and that the fire protection is reduced to such a point that it amounts to little or no fire protection.

During the year which has gone by we have had two very expensive fires there which we could not fight because the water supply was insufficient to cope with them, and this is for the purpose of installing the necessary tanks and reservoir so that there will be enough water locally to take care of that situation, and for the purpose of increasing the size of the mains so that the flow through the mains can be heavy enough to meet such a situation, should it occur again. That is what this \$160,000 is for. This has been very exhaustively studied, and there were a number of propositions to join with the city of Leavenworth Water Co. in developing a new water supply. The water supply situation there is very unfortunate. The supply that comes to Fort Leavenworth is the only portion of the supply that is filtered. The water supply that goes to the city of Leavenworth and to the Federal prison is not filtered, and we were making an effort to see if we could not get some combination with the water supply company so that the whole community would have a high class water, but in each instance it showed up such a cost to the Government that we determined that we could not join with them, and we would not be justified in coming to Congress to ask any expenditure for water other than that pertaining to Fort Leavenworth itself.

The CHAIRMAN. You say you have had a couple of fires there?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. How serious were they?

Mr. FIELDS. One was within the prison?

Gen. MARSHALL. One of them was a \$200,000 fire.

The CHAIRMAN. The Government does not insure its own property, so really you can make this betterment for less money than you have lost by the fire?

Gen. MARSHALL. Yes; during the last year, and that is the reason for it.

The CHAIRMAN. How much did you have in the last appropriation bill for water and sewers at military posts?

Gen. LORD. \$7,000,000 was appropriated in the bill.

The CHAIRMAN. Last year?

Gen. LORD. For the current fiscal year 1920.

The CHAIRMAN. You are asking for the same amount this year?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. How did you make out last year? What I mean is how much money did you expend of the \$7,000,000?

Gen. MARSHALL. It will all be expended. We have used in the first three-quarters of this year, of all of our money for water and sewers, \$4,541,000.

Gen. LORD. There is a balance, under date of March 24, of \$2,128,878.14. Some of that was obligated and some has since been obligated.

Gen. MARSHALL. Yes; the unobligated balance to-day is \$1,557,739.24. That is what we had left on March 6. That will see us through the rest of this year.

The CHAIRMAN. There is no deficiency?

Gen. MARSHALL. It is going to see us through this year because we are going to make it see us through, not because we can begin to do many things that we ought to do, not particularly with this appropriation, but generally speaking, for protecting Government property. That is the situation that exists during this fiscal year. We can not do the things that common prudence demand in protecting Government property.

Mr. McKENZIE. General, the \$160,000 that you speak of, to take the place of the proviso on page 31 of the pending bill, includes \$30,000 for the pumping station at Fort Leavenworth, does it not?

Gen. MARSHALL. We do not propose to put in any pumping station. That language on the next four lines all comes out; that is all cut out.

Mr. McKENZIE. I understand it is all cut out, but I want to know whether it was included in the \$160,000?

Gen. MARSHALL. That pumping station was in connection with the sewer system, not in connection with the water system.

Mr. McKENZIE. That will be \$30,000 that we can give at some other time?

Gen. MARSHALL. We will have to get around to the sewer system after a while.

The CHAIRMAN. What is the next item?

Gen. LORD. Military post exchanges, Mr. Chairman, at the bottom of page 36.

Gen. MARSHALL. I made a mistake. There is \$160,000 there for a joint water supply for the Army and Navy at Ford Island, in Hawaii.

The CHAIRMAN. You want that added?

Gen. MARSHALL. That is in there. That is in the bill. The bill, as worded in the committee's draft, is correct to the phrase, "Filtration plant at Niagara Falls"; all after that cut out.

The CHAIRMAN. Is that expended as yet. Has that item for Ford Island and Fort Kamehameha been expended?

Gen. MARSHALL. No, sir. We have no appropriation for the water supply there on Ford Island.

The CHAIRMAN. But we carried in the bill last year \$160,000 for that. Do we have to reappropriate this year? It was in the bill.

Gen. MARSHALL. No, sir.

The CHAIRMAN. Oh, no; that is—

Gen. MARSHALL. That is this year's bill.

The CHAIRMAN. I see what you mean. In other words, you want the \$160,000 for the Army's share of the joint water supply, etc.?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. And you want \$30,000 for a filtration plant at Fort Niagara?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Just explain those two items, if you please.

Gen. MARSHALL. The water supply system is for Ford Island, for Fort Kamehameha, and for Pearl Harbor. We began drilling two artesian wells to obtain the water, and this is to supply all the demand of the Army and Navy in Pearl Harbor and—

The CHAIRMAN. Kamehameha is the fort at the entrance to Pearl Harbor, is it not?

Gen. MARSHALL. Yes, sir; Kamehameha is the fort at the entrance to Pearl Harbor.

The CHAIRMAN. Where is Ford Island?

Gen. MARSHALL. Ford Island is in Pearl Harbor. It is a naval reservation, as I understand it, and the Secretary of War instructed that our share of this be included in the appropriation with the understanding that the Navy included theirs in the Navy appropriation.

The CHAIRMAN. How much is their share?

Gen. MARSHALL. It is half and half.

The CHAIRMAN. The Army has only a fraction of the interest there that the Navy has. The Army has but a small fraction of the interest there that the Navy has, has it not?

Gen. MARSHALL. The Army has its coast defenses there. What their relative part is I do not know. They have an air service—well, I just do not know what they are.

The CHAIRMAN. Well, of course, Fort Shafter is over on the other side of Pearl Harbor?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. I presume they have their water supply?

Gen. MARSHALL. They have their own water supply.

The CHAIRMAN. The Navy, then, is expected to produce the other \$160,000, is it not?

Gen. MARSHALL. Yes, sir; that is the amount agreed on between the Navy authorities and the Army authorities, as I understand it, and approved respectively by the Secretary of War and the Secretary of the Navy.

The CHAIRMAN. Will you put in the hearings a full statement about it?

Gen. MARSHALL. Yes.

The CHAIRMAN. You have \$30,000 for a filtration plant at Fort Niagara?

Gen. MARSHALL. The water supply at Fort Niagara is now chlorinated, but the chlorination will not take care of solid matters that might be in the water, and the condition of the water at Fort Niagara is that the water that comes through the pipes frequently has fecal matter in it, and without filtration it can not be removed. The location, and the source of the water supply, is such that there is sewage dumped into it, and it is in that condition, and the filtration should be installed.

The CHAIRMAN. We will take the next item and see what the next expense is.

Gen. LORD. Military post exchanges.

The CHAIRMAN. Yes; military post exchanges.

Gen. LORD. On page 36, Mr. Chairman.

Gen. MARSHALL. That is entirely for operation.

The CHAIRMAN. You are asking for an increase there from \$675,000 to \$833,000?

Gen. MARSHALL. No, sir.

Gen. LORD. \$220,000 of that is estimated for by the Construction Division. The balance estimated for will be supported by Gen. Reese.

The CHAIRMAN. You are asking for \$220,000 of that amount, I see?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Is there an increase on your end of that appropriation?

Gen. MARSHALL. There is an increase from \$179,000 to \$220,000. That increase is due to the fact that during the next fiscal year we will have a great many more buildings to take care of than we had last year. Some of the Liberty theaters that have been cared for by other agencies will be cared for now through this appropriation. There is no new construction in here. This is purely a question of maintenance.

The CHAIRMAN. It is a \$41,000 increase?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Is that altogether due to the fact that we have had to take over the Liberty theaters?

Gen. MARSHALL. Yes, sir, and such other new buildings as there are. By the Liberty theaters I mean the civic center of these camps.

The CHAIRMAN. The Red Cross and all those organizations used to do this work?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. And they have turned it over to the War Department?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Is there any new construction going on at any of these military post exchanges?

Gen. MARSHALL. I think that the last have been completed. Fort Monroe, I think, was the last one that they had actually under construction, and that is completed. Camp Knox they are asking for, I think.

The CHAIRMAN. But they want that out of the unexpended balance for Camp Knox. They are not asking for a new appropriation, as I recall.

Mr. FIELDS. They want it out of the unexpended balance.

Gen. MARSHALL. We have expended nothing except for maintenance, so far as we are concerned. The other activities have expended money for such as Liberty theaters.

Mr. GREENE. You stated, General, that this item is largely made up, or practically made up, by the fact that the activities in the nature of recreation for the troops, Liberty theaters, and so on, that had hitherto been conducted by civic associations, are now to be conducted by the Army?

Gen. MARSHALL. Yes, sir.

Mr. GREENE. What became of the physical apparatus, the buildings and various things, the plants themselves?

Gen. MARSHALL. At the Regular Army posts—well, at certain of them, at least—these places have been turned over to the Government, and this estimate here is for the maintenance and upkeep and repair of those buildings.

Mr. GREENE. It is not for the construction of new ones?

Gen. MARSHALL. No, in no case.

Mr. GREENE. Are they largely in these old cantonments and places like that?

Gen. MARSHALL. No. For example, take Fort Sill, Okla. They have got some very nice buildings there, and I just mentioned the last one, Fort Monroe, Va. Then, at Fort Leavenworth, Kans. I think we have got a Red Cross or Knights of Columbus building—I forget which it is—and there are a great many of our permanent posts that have these buildings, and they are to become the property of the Government, or are the property of the Government.

Mr. GREENE. However, at the old-time permanent posts those things were instituted probably on a scale large enough to take care of the unusual numbers that the war brought out, were they not?

Gen. MARSHALL. In many cases; yes.

Mr. GREENE. If we get back to anything like the normal enlistment of enlisted men, would not the old original housings in the barracks or garrisons ordinarily take care of these requirements?

Gen. MARSHALL. There are very few of those places that had any such thing, particularly Liberty theaters.

Mr. GREENE. I understand it was a new thing pretty much during the war, but I mean if we get back to anything like a normal basis the old-time military posts that will be in operation hereafter will not need the same amount of physical plant for recreation and for theaters, etc., would they, as they did in war time?

Gen. MARSHALL. I think not, but in practically all of these theaters they have got a moving-picture show, and I dare say they will be continued.

Mr. GREENE. I am not questioning the value of recreation; I am only trying to get at whether—

Gen. MARSHALL. I do not see how they can use them all eventually, unless these places grow up to them. Where they have got a Liberty theater, a Red Cross building, a Knights of Columbus building, and a Jewish Welfare building, all at one of these places, that was relatively small before the war and was built up temporarily, just how they will all be utilized is something that will develop along with the rest of the development of the housing problem.

Mr. GREENE. That comes right to this: In the first place, it was a war-time activity, which was undertaken on an unwise scale to take care of the probable need then.

Gen. MARSHALL. Yes.

Mr. GREENE. In the second place, I think it was unwisely divided into sects and various groups, and therefore each one had to have an independent foundation, which was a mistake.

Gen. MARSHALL. Yes.

Mr. GREENE. That leads me to ask would more than one or two of these buildings need to be maintained?

Gen. MARSHALL. That has to do with the question of policy, just like the question of policy of retaining all these cantonments. We have got, of course, 22 of them in operation.

Mr. GREENE. That leads me to ask if at some of the old posts, when you get back to the garrison numbers that are easily housed at these posts, there could not be such a thing as extemporizing a

home for moving pictures in a permanent structure that is already there?

Gen. MARSHALL. There are very few that have any facilities that could be used for that in the old permanent structures.

Mr. GREENE. What were the old canteen arrangements?

Gen. MARSHALL. They just did not have them. At Fort Monroe, which was a pretty big place, we had to have our movies out of doors. There was no other place to have them.

The CHAIRMAN. You had a military post exchange building in most of the camps?

Gen. MARSHALL. Yes, sir; but the gymnasium part of it was relatively small, and the whole layout was used to capacity, and there was no place for facilities of this kind.

Mr. GREENE. Of course, I realize that the initial authority for this you are not responsible for, but what I am mostly anxious to find out is whether it is the policy of the Army people to ask for appropriations for the construction of new buildings for this purpose, or whether there is a spirit of willingness to extemporize for a little while in the matter of facilities for these activities?

Gen. MARSHALL. I do not think there is anything of that kind in mind for this purpose, because of the fact that all of these facilities at many of the places can not be continued to be used for this purpose.

The CHAIRMAN. Let me elaborate a little on that suggestion of Mr. Greene's. During the period of training for the war you had, General, about 40,000 men at each one of these cantonments?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. And the buildings that were put up contemplated taking care of a large number of men. Now, there are only skeleton organizations, 3,000 men, 2,500 men, and in one or two, as many as 3,500 or 4,000 men. As a matter of fact, you have closed down almost every one of those particular buildings, and are doing your work in only one. Under those circumstances, can not this appropriation be materially cut?

Gen. MARSHALL. Well, I do not believe it can. It is made up from the necessities of the case at each of the stations, as presented by the local authorities, on maintenance and repair alone, and not with any idea——

The CHAIRMAN (interposing). Let me ask you this, then. How many men in the Army did you base these figures on; how large an Army?

Gen. MARSHALL. Our figures are based on maintaining the number of places that are indicated in that column, and it is enough capacity to house 1,000,000 men or more, and we have cut the maintenance figure down to a point where I say we can not preserve the properties of the Government in many instances.

Mr. GREENE. You recall about the beneficent gentleman who presented his friend with a white elephant by leaving it in his yard? Of course, he had to pay for this elephant right along afterwards. And the question is have we got to accept all these Liberty theaters and keep them in repair, or have we not facilities enough to get along through this year with the original post construction?

Gen. MARSHALL. I think that when these places are finally settled upon, all of these facilities are going to become available for the purpose of the vocational educational feature.

Mr. GREENE. That is only calling the expenditure by another name.

Gen. MARSHALL. But you are not going to do the vocational education part of this thing without the expenditure of money.

Mr. GREENE. I understand that.

Gen. MARSHALL. You are not going to do it without a place in which to do that specific thing.

Mr. GREENE. I understand that.

Gen. MARSHALL. I might further explain that in drawing the plans that I have drawn, which I showed you this morning, I have included no specific buildings for vocational educational training having only in mind that some of these buildings would be available for that.

Mr. GREENE. I did not know but what the gentleman, with the usual interest in the service, had in mind that a part of the time might be devoted to military matters.

The CHAIRMAN. These buildings anyhow have a great many chairs just like in a theater?

Gen. MARSHALL. Yes.

The CHAIRMAN. The great part of the vocational training is going to be in the workshops?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. So that the amount of vocational training that could be done in these buildings, after all, is pretty small?

Gen. MARSHALL. I do not pretend to defend the continuous use of these buildings. It is first of all a fact that they are there, and I am charged with their upkeep, and when it comes to their use, if we are authorized to rehabilitate these places, we will use them to some good advantage.

The CHAIRMAN. That is a frank statement.

Mr. MCKENZIE. Is not this about the situation that you find yourselves in from a military standpoint, that you have got a little too big a house for your family?

Gen. MARSHALL. There is no question about that.

The CHAIRMAN. The next item is "Barracks and quarters, Philippine Islands."

Gen. MARSHALL. For 10 years prior to the war you appropriated \$500,000 for the upkeep of the barracks and quarters in the Philippine Islands. For some reason last year you put it at \$250,000. Just what that reason was I have been unable to determine.

Mr. MCKENZIE. General, I think I can remember that one of the things that occurred to me was that we appropriated \$500,000 a year, and that in time we would have barracks sufficient to take care of the number of men we had over there.

Gen. MARSHALL. As far as the barracks capacity is concerned, there were no new barracks being built over there. This amount was for the general upkeep and repair and minor new construction and matters of that particular import, and the fact that you did appropriate only \$250,000 caused considerable embarrassment until we found out that it was legally possible to use some other fund over there. The commanding general there had overrun his \$250,000 at

the end of six months, and we were forced to use some funds from other appropriations to avoid a deficit.

The CHAIRMAN. What is the character of construction for quarters in the Philippines?

Gen. MARSHALL. The quarters in the Philippines vary. I have never been there, but I know, generally speaking, what the character of construction is. Over on the island it is concrete, and so on. Perhaps Gen. Lord can tell you better than I can, but the construction, principally speaking on Corregidor Island is concrete. When you get to the other places, generally speaking, it is frame construction, and they have a great deal of difficulty there on account of a local worm.

The CHAIRMAN. An ant?

Gen. MARSHALL. An ant.

Mr. FIELDS. That is where the bugs eat the buildings?

Gen. MARSHALL. They eat them up, and in consequence the upkeep and maintenance on the buildings run relatively high, and as I presented to the committee last year, it averaged \$500,000 for the 10 years, and that included up to June 30, 1916.

The CHAIRMAN. I have a faint recollection to the effect that and will not attack the California red-wood lumber. Has that been verified?

Gen. MARSHALL. I do not know, sir; I do not know whether it does or not. I am not well informed on the Philippine Islands.

Gen. LORD. On my last tour of duty in the Philippine Islands my wife had a chest in which she put away some of her fine things, laid away in layers, and the ants ate up through the floor of the chest, right up through the fabrics in the chest, until they came right up to the top of the chest.

The CHAIRMAN. But the estimates do not call for anything.

Gen. MARSHALL. \$250,000 there, but under barracks and quarters I put another \$250,000. The expenditures are such that so far as we can determine, they can not get along without it. We have cabled them and written them, but I have not gotten the reports that I would like to submit to the committee yet. It has been one of the most difficult situations to handle this year in order to avoid any deficit, but they have done that. We have done everything we know how to avoid any deficit, and that has been one of the most difficult situations that we have had to handle.

The CHAIRMAN. The next item is, "Roads, walks, wharves, and drainage," on page 38.

Mr. MCKENZIE. Before going on to that, does this appropriation carry any item for water supply at Fort D. A. Russell?

Gen. MARSHALL. Not any new construction connected with it.

The CHAIRMAN. All right, General, we will take up the matter of roads, walks, wharves, and drainage, on page 38.

Gen. MARSHALL. All that in italics is to come out.

The CHAIRMAN. That can come out?

Gen. MARSHALL. Yes, sir; and substitute what we have on here, \$100 for the purchase of land near terminal of bridge at Deer Island, Boston Harbor, Mass. This is recommended by the department commander and the Chief of Coast Artillery, in order that access may be had to the wharf on Deer Island, rather than the wharf at Fort Banks that they now use to send supplies to all of the island

posts in the harbor. The wharf at Fort Banks is dilapidated and needs replacement, and the estimated cost of the replacement is approximately \$100,000. The department commander and the Chief of Coast Artillery concur in the idea that they would be better able to supply the wharves across from Deer Island at a very much less expense. In order to build a bridge across Shirley Cut it is necessary to purchase the right of way from the State or Commonwealth—I have forgotten which it is—at \$100, and that is what that item of \$100 is for. It requires special action of Congress to purchase land, and hence it is being included as a special item.

The CHAIRMAN. You have framed that language?

Gen. MARSHALL. Yes, sir. I think that language will care for it, "\$100 for the purchase of land near terminal of bridge at Deer Island, Boston Harbor, Mass."

The CHAIRMAN. I see you are asking for \$725,000 more in this estimate for 1921 than you received last year in the appropriation bill?

Gen. MARSHALL. Well, if you will look at this big sheet you will see that the value of our material on hand, surplus material, which we used this year, amounts to over \$1,000,000, so the amount we are asking for next year is about \$700,000 less than we used this year.

Mr. McKENZIE. Where are these roads to be built?

Gen. MARSHALL. This is for maintenance, upkeep, and repair, and a few small extensions, but there is no road building.

Mr. McKENZIE. I suppose that includes the general policy of keeping up the roads in all of these 16 large camps or cantonments?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. And, in addition to that, the regular old-established Army posts will be looked after?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. There is another thing we are up against, whether we ought to do that or not.

Gen. MARSHALL. Yes, sir; that is a real problem, and it is worth money, what you ought to do.

Mr. McKENZIE. General, I would like to ask your judgment about the thing. If we would just absolutely cut off all of this appropriation, do you not believe that the War Department and Congress could come together, as you suggested this morning, and finally determine that we had to take care of some of them, and then we would decide which ones, but if we keep going on with this sort of blanket policy of putting a little here and a little there, as a matter of fact, we will waste it all in the end, because, if we are going to have a permanent post, we ought to commence permanent construction.

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. And all this money that we spend for the maintenance of these roads that we are fixing up will be simply thrown away.

Gen. MARSHALL. I think that action would be a little radical.

Mr. McKENZIE. It takes radical action sometimes to cure these things.

Gen. MARSHALL. I think something should be done to limit the number of places used within the limits of the number of men that we are going to have. That is certain.

The CHAIRMAN. For the fiscal year 1916 we appropriated for this purpose \$600,000.

Gen. MARSHALL. Yes.

The CHAIRMAN. And here it is running up to \$4,725,000. How much of that \$4,725,000 is to be expended at the 32 National Guard camps and National Army cantonments? We have 16 of each.

Gen. MARSHALL. None at the National Guard camps. At the 16 National Army cantonments about \$1,200,000.

The CHAIRMAN. That is all for repairs, is it not?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. What is the condition of the roads in those cantonments at the present time?

Gen. MARSHALL. They vary all the way from perfect to miserable condition. For example, at Camp Pike, Ark., the road leading into the camp is fairly good. All the other roads in the camp are in a miserable condition and when we start, of course, this spring we will do as much as the money will permit, and then continue on according to the appropriations that are made here.

The CHAIRMAN. Were those roads, in their original construction, not so well constructed as those in other cantonments?

Gen. MARSHALL. Except where we have concrete roads, the heavy traffic they have been subjected to has told on them tremendously.

The CHAIRMAN. Has the traffic been heavier there at that camp than it has been at Meade or any one of these places?

Gen. MARSHALL. No; but Meade seems to be very well cared for. But if you go off of the concrete roads in any of the camps, you will find a pretty bad condition.

Mr. GREENE. The original soil has something to do with the durability of the dirt road?

Gen. MARSHALL. Yes.

Mr. MCKENZIE. How would this solution strike you, to make an appropriation here to be expended in the repair of roads in permanent military posts of the country, and not to carry any appropriation for these temporary camps and cantonments? I can understand the embarrassment that you might be placed in. You get a requisition from these various camps for certain road construction, and naturally you would like to take care of it, but if you can say to these officers in command that you have not any money for construction at that camp, that ends the proposition?

Gen. MARSHALL. Here is the situation with respect to that: In this country our total housing capacity in the permanent military posts is, if my recollection serves me right, about 83,000. I am talking about the continental limits of the United States now. The Army which you gentlemen recently authorized is 300,000, and we have got to put them somewhere.

The CHAIRMAN. We are trying to figure out on an enlisted force of about 175,000. Now, with that in mind, would you be able to reduce this item very materially?

Gen. MARSHALL. If you are going to do what you are able to do, from that point of view alone, that is one thing. If you are going to maintain anything on a very reasonable military policy, that is another thing. It is, of course, possible to put all of these men into a few places.

Mr. McKENZIE. My thought about it is that if we put them in a number of places, those roads are not going to get into such a condition but that they will be passable. They might get some holes in them here and there, but certainly the officer in command could use his men to fix up a few of those bad places, and he could get along for a year or so until we have decided.

Gen. MARSHALL. I do not know what the mileage of the roads in those cantonments is, but I understand that in some of them there are 25 miles of road.

Mr. McKENZIE. In some of them there are more than that.

Gen. MARSHALL. Yes, but they will average at least that much. Take the State of Massachusetts. I think they spend about \$800 per mile per year on the upkeep of roads, not on building or replacement when replacement becomes necessary, but on maintenance; I do not know how many thousand a year, but on 25 miles it is \$20,000 a year at one place.

The CHAIRMAN. Have you not the same condition in regard to the roads that you have in regard to the buildings? These camps were constructed for 40,000 men, and the buildings and roads spread out over a great extent of territory. Now, there are only about 2,000 or 3,000 men in these cantonments. Surely, they do not need all those roads in first-class condition, because some of them are not used at all.

Gen. MARSHALL. Yes. Now, going back to the comparison, the fact that \$600,000 was appropriated in 1916, having been mentioned, all material and labor costs not less than double what it did before.

The CHAIRMAN. That is true.

Gen. MARSHALL. And I note here that we have got \$1,260,000 for this purpose at the Regular Army posts, which squares almost exactly with the appropriation made at that time for the same purpose, and which indicates that our estimates are based, generally speaking, upon about the same share that they received at that time at all these places.

The CHAIRMAN. Some time ago, probably six weeks ago, Congress passed a law authorizing the Secretary of War to turn over to the Road Bureau of the Department of Agriculture all surplus road building material. Under the conditions as you describe them, do you think that you will have any surplus road building material?

Gen. MARSHALL. Yes; we will have some. There were 14 of these National Guard camps that have been abandoned.

Mr. McKENZIE. You take care of flying fields, do you not?

Gen. MARSHALL. Yes, sir.

Mr. McKENZIE. And all these minor camps of one character and another, in addition to camps and cantonments?

Gen. MARSHALL. Yes, sir. I am trying to find the places that have been abandoned so as to give you some idea of the expense.

The CHAIRMAN. You can put that in the hearings. Is there anything else on this item that you desire to say?

CAMPS ABANDONED AND ORDERED SALVAGED.

Beauregard, La., camp; Bowie, Tex., camp; Cody, N. Mex., camp; Crane, Pa., camp; Doniphan, Okla., camp; Fremont, Calif., camp; Hancock, Ga., camp; Greene, N. C., camp; Kendrick, N. J., camp; Las Casas, P. R., camp; Las Casas, P. R., camp (third officers' training camp); Logan, Tex., camp; MacArthur, Tex., camp; Nichols, La., camp; North Camp Jackson, S. C., Sevier, S. C., camp; Shelby, Miss., camp;

Sheridan, Ala., camp; Syracuse, N. Y. (recruit camp); Wadsworth, S. C., camp; Wheeler, Ga., camp; Colt, Pa., camp; camps near Fort Oglethorpe, Ga.; Merritt, N. J., camp; Mills, Long Island, N. Y., camp; camps near Newport News, Va.

Gen. MARSHALL. This is not only roads, but it is drainage that is included in this item for roads, walks, wharves, and drainage. We have got an item of \$28,500 for drainage there at Camp Humphreys. At Camp Humphreys—I do not know whether you want to look at the map or not—there is a lot of low areas that need to be diked and drained to prevent the mosquito nuisance. It appears that they spent down there last year from the medical department appropriations about \$7,500 in taking care of that situation. They estimated that they could use enlisted personnel on this work, but the enlisted personnel got down so low after a while that they had to use civilians, and the total hire for civilians was \$7,510.

In the beginning they used enlisted personnel, but in two and a half to three months there were no enlisted men available and they had to hire civilians at a total cost of about \$2,660 per month or \$16,000 per year, using civilians only. In the survey the statement is made that by putting in this drainage system it will obviate the necessity for the expenditure of these funds and will afford protection against epidemics.

The CHAIRMAN. Will that be permanent drainage?

Gen. MARSHALL. Yes, sir; that will be permanent drainage.

Mr. GREENE. Would this drainage, if properly installed and maintained, have any effect on the life of your roads?

Gen. MARSHALL. The life of roads is as dependent on drainage as on anything else; however, this drainage will not affect the roads very materially.

The CHAIRMAN. Part of that estimate for this drainage is for repairs in permanent camps, is it not?

Gen. MARSHALL. It is distributed all over.

The CHAIRMAN. Can you, without any great trouble, put into the hearing just exactly what you are going to use for that item of drainage?

Gen. MARSHALL. Yes, sir; I will put that in the record.

The CHAIRMAN. The next item is—

Gen. MARSHALL. There is another item here, replacement of dock at Fort Slocum, N. Y.

The CHAIRMAN. Where is that?

Gen. MARSHALL. On this sheet; it is \$48,550.

The CHAIRMAN. You did not have that in the estimate at all, did you?

Gen. MARSHALL. No, sir; that dock is the dock at Fort Slocum to which the supplies are carried and from which boats go back and forth, making frequent trips. They used to have two boats plying between New York and this dock at Fort Slocum but the dock has been condemned and is no longer fit for use without replacement; the Government owns this dock and it is necessary that this dock should be replaced. Fort Slocum, as you gentlemen no doubt know, is a recruiting depot and I dare say you are all familiar with its activities; it has a capacity of 5,800 men and recruits are sent there and from there distributed to various places in the East.

The CHAIRMAN. And the next item.

Gen. LORD. Page 40, "Quarters for hospital stewards."

The CHAIRMAN. You are asking \$10,000 more this year than we allowed last year; what is the reason for that?

Gen. MARSHALL. These items we have in here are the items in connection with these hospitals, principally for these major hospitals along the Mexican border; during the last year, particularly along the Mexican border, we have made provision for troops stationed there and have \$2,000 as the estimate of the cost that will be necessary under this appropriation for that purpose and the same way at the minor hospitals, as we designate them: we put in an item there for repairs of the quarters of the hospital stewards, which we believe will be necessary.

The CHAIRMAN. The next item, "Shooting galleries and ranges."

Gen. MARSHALL. In connection with the shooting galleries and ranges there should be inserted at the end the amount of \$23,000, with which to provide for a range and shooting gallery for the Tank Corps.

The CHAIRMAN. Of this \$100,000?

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Have you that divided?

Gen. MARSHALL. \$90,196 is what we are asking for, and of that we need \$23,000 to construct a range and shooting gallery for the Tank Corps at Camp Meade.

The CHAIRMAN. You want this language added:

Provided, That not to exceed \$23,000 to be used in the erection and completion of a shooting gallery and small-arms range for the Tank Corps at Camp Meade.

Gen. MARSHALL. Yes, sir.

The CHAIRMAN. Is there anything else?

Gen. MARSHALL. The chief of the Tank Corps has stated that it is very necessary for them to be able to fire from the tanks in motion, and that this is a very necessary part of their instruction and testing in connection with the personnel themselves and in connection with the tanks. They have no such facilities at Camp Meade, and without these facilities they can not get this training, and consequently he is pressing this just as hard as he possibly can.

The CHAIRMAN. Do they fire at moving objects?

Gen. MARSHALL. I think not; the tank itself is in motion; I do not think this contemplates any moving objects, but can not answer definitely in regard to that.

The CHAIRMAN. Is there anything else?

Gen. MARSHALL. The construction and repair of hospitals, there are two items which Gen. Ireland did not cover.

The CHAIRMAN. He informed us that the only items he was asking appropriations for were the Walter Reed General Hospital and the Letterman General Hospital.

Gen. MARSHALL. I do not think he intended to say that; I think what he meant to say was that all he wanted to appear before the committee for was in regard to these two. There is a hospital at Camp Knox, which is not usable and which has already cost the Government a million and a half dollars. It requires only \$85,000 to complete this hospital.

The CHAIRMAN. How much are you asking for that purpose?

Gen. MARSHALL. \$85,000.

The CHAIRMAN. That is not in this estimate at all.

Gen. MARSHALL. It is on the sheet and is to come out of that estimate. It does not increase the amount of the estimate. I do not know whether you want any data in regard to this Camp Knox at all, but I can give you enough to convince you it is necessary. It has never been completed; the heating facilities have not been completed or the pipe lines connected up; certain buildings are all done except the stucco on the outside and, as I say, the hospital is not operated as it stands to-day and has cost a million and a half dollars to date. The buildings they are using at present are heated by room heaters, have no water, and no toilet facilities in them. They are used as a temporary expedient because they have nothing else to use.

The CHAIRMAN. How about Camp Holabird?

Gen. MARSHALL. The sick have been taken to Fort McHenry, but Fort McHenry is on the list to be abandoned.

The CHAIRMAN. Is that an Army hospital or a Public Health Service hospital?

Gen. MARSHALL. It is an Army hospital, but is going to be transferred to the Public Health Service. A great many of our hospitals have been transferred to the Public Health Service, and that one is also to be transferred to them, and consequently they need hospital facilities at Camp Holabird which they do not now have.

The CHAIRMAN. At Camp Holabird, I understand, there are 1,000 men in training. How large a hospital will you be able to build for \$75,000; that is, how many beds?

Gen. MARSHALL. There are 2,600 troops there and it is to be an 86-bed hospital. This money is for the purpose of altering certain buildings to provide for 86 beds.

The CHAIRMAN. Is that a permanent building?

Gen. MARSHALL. They are frame buildings, but they are to be altered so that they will have permanent roof and permanent underpinning and also fixed up inside, sealed on the inside.

Mr. McKENZIE. Do you think it necessary to maintain these automobile or motor repair camps? Should not camps of this kind and nature be made adjacent to our other camps? What is the necessity of having Camp Holabird?

Gen. MARSHALL. You have now gotten into a subject I know very little about.

Mr. McKENZIE. But you are a soldier, a military man, are you not?

Gen. MARSHALL. I have been all my life almost, but I do not know just what the purpose is.

Mr. McKENZIE. I am not criticizing the purpose, but am not able to see why it is necessary to construct a separate plant to teach our boys how to put up a gas engine or operate an automobile; why could it not be done alongside Camp Meade?

Gen. MARSHALL. I suppose the answer to that is that it is there, but if you would revert back to the beginning perhaps it would be another story. These buildings are permanent buildings used for factory and machine shop. At Camp Jesup there is another shop; the buildings are the finest kind of shop buildings; I guess they are the last word in that kind of practice. Camp Holabird is where it is, and to move it to another place would, I believe, cost more than to maintain it where it is.

Mr. McKENZIE. It would cost something to move it, but if moved we would be relieved of the overhead.

Mr. GREENE. Have you any other similar institutions?

Gen. MARSHALL. There are three, Camp Holabird, Camp Jesup, and Camp Normoyle, Tex.

Mr. GREENE. Do you figure that it will be confined to these three, or have you figured that other camps and other localities, learning of these three, will want these things duplicated in their neighborhood?

The CHAIRMAN. If we are in Congress when that time arrives we will have to fight it. Is there anything else?

Gen. MARSHALL. That is all, gentlemen, except the Walter Reed—

The CHAIRMAN. We had an explanation of that this morning.

Gen. MARSHALL. I do not know whether I should go into this matter of operation of utilities again so as to get it separated from construction. The words "barracks and quarters" is an unfortunate name for that appropriation and leads to the idea of construction, when only 16 per cent is for construction; the other is for upkeep, maintenance, and repair, fire protection, operation of water supply, and every-day living facilities of men who live in houses.

The CHAIRMAN. I think the subcommittee understand that, General.

Gen. MARSHALL. That is the thing I want to get across if I can use language strong enough, that of that amount approximately 40 per cent is for maintenance and repairs and the rest of it for operation, for protection, water supply, electricity, and similar things.

The CHAIRMAN. Of course, of all this upkeep and repair, a great proportion is for labor, is it not?

Gen. MARSHALL. Yes, sir; a great proportion is for labor.

The CHAIRMAN. About 60 per cent, would you say?

Gen. MARSHALL. I expect more than 60 per cent is for labor. I think the labor is about 70 per cent.

Mr. GREENE. How much, relatively, at a guess, does the Army itself contribute in the way of labor?

Gen. MARSHALL. Right now very little. It is very difficult to get soldier labor; we figure that soldier labor would be a whole lot cheaper if we had it.

The CHAIRMAN. Can not the soldiers be given vocational training in carpentry, masonry, etc.?

Gen. MARSHALL. We do that now. When a job comes in to the utilities office, the clerk in charge classifies the jobs. Those that have to be immediately attended to are looked after first and those that do not are taken in their turn, the utilities office turning them over to the vocational training people for them to take care of. We think that as vocational training gets along it will settle down to a practical basis and that the utilities organization is going to offer them more of this than anything else they have in the camp; it will be labor that will help the Government as well as the man.

CONSTRUCTION CAMP BENNING.

Gen. LORD. Gen. P. B. Malone, with the authority of the Secretary of War, will present the construction project at Camp Benning. The amount of the appropriation asked for this year will not be in excess of \$1,000,000, although the total project is considerably more than that.

The CHAIRMAN. We will be glad to hear Gen. Malone.

STATEMENT OF GEN. PAUL B. MALONE.

Gen. MALONE. An estimate for the amount of construction at Camp Benning was not included in the appropriation bill for this year because the question of continuing Camp Benning was before Congress. A bill covering the matter of its continuance was approved on February 28, 1920, and provided \$835,000 in all to be expended at Camp Benning; \$250,000 of this to be expended for construction and in addition thereto \$70,000 was made available for the construction of a 60-centimeter railway system. Since the bill was passed the construction division was asked to state to the War Department how much could be accomplished by the expenditure of the \$250,000. The Construction Division insisted that it was necessary to install water system as a matter of safety at a total cost of installation of \$125,000, leaving a balance of \$125,000 for construction. \$25,000 or \$30,000 is necessary for sewage and the balance is necessary for the completion of some of the buildings already started. When that total sum of \$250,000 shall have been expended we shall not have progressed in any material way toward the realization of the entire scheme.

The CHAIRMAN. Would it interrupt you if I were to ask you if you know whether or not the department has a large unexpended balance for the purchase of places like Camp Benning?

Gen. MALONE. If it has, sir, I am not aware of it.

Gen. LORD. There is no unexpended balance available for the purchase of any land unless it was contracted for and the Government definitely obligated before July 1, 1919.

The CHAIRMAN. My recollection is that all these purchases were made from a lump-sum appropriation, and I wondered whether there was a limitation on the lump-sum appropriation so that it lapsed after a certain time.

Gen. LORD. The purchase of real estate of this character would have been made out of the lump-sum appropriation, which is an annual appropriation and would have to be reappropriated for any unexpended balance.

The CHAIRMAN. But I do not think Camp Benning land was purchased from any specific appropriation of money.

Gen. MALONE. The act approved February 28, 1920, carried \$515,000 for the completion of the purchase of land.

The CHAIRMAN. But the War Department expended many millions of dollars for the purchase of land at Camp Benning. This committee, so far as I can recall, never appropriated any money for that purpose at all, and was very much surprised to learn that the purchase of large areas at Camp Benning had been made and that was one of the reasons why that provision of the act of July 1, 1919, was put in.

Gen. LORD. There was a general authorization during the war for the purchase of land.

The CHAIRMAN. Is there not an unexpended balance in that fund under which such purchases were made?

Gen. LORD. There is under general expenditures in the Quartermaster Corps for 1919, which can be made available by reappropriation of this committee.

The CHAIRMAN. Do you know how much of an unexpended balance there is in that fund?

Gen. LORD. Approximately \$35,000,000.

The CHAIRMAN. So that if we were to put a provision in this bill that so much of that unexpended balance remaining in this fund be used for this particular purpose it would not be a new appropriation in this bill?

Gen. LORD. No, sir; the money would be furnished. We have that money.

Mr. GREENE. You, of course, Mr. Chairman, have in mind the specifying of a certain limited amount?

The CHAIRMAN. Yes, sir.

Gen. LORD. The money has already been appropriated for the purchase of land.

The CHAIRMAN. Well, I wondered whether any of that money still unexpended could be reappropriated for further development.

Gen. LORD. It can be appropriated for any purpose that Congress may decide.

Gen. MALONE. In order that the program might be submitted to the committee when opportunity offered, a board of officers was convened to look into the matter and prepare a plan of development for the Infantry school which would provide for all possible contingencies in the future and then to present a minimum plan for realization in the near future if not in the immediate future. This map I have here [indicating] presents the entire plan. This camp was originally intended for the training of 20,000 officers should an emergency, similar to that of the great war, occur again so we would not be caught napping. None of us who are presenting this imagine that this whole program is going to be realized unless Congress so directs.

The CHAIRMAN. What will be the cost of the entire plan?

Gen. MALONE. We did not even consider that, Mr. Chairman: we considered merely what we must have; a water supply, a sewage system, and the necessary construction. We went into every detail and looked into the future so as to consider everything in connection with it. We changed the position of the hospital with a view of giving it a more desirable outlook for the convalescents and so as to be removed from all noise.

Mr. FIELDS. Where is the point of entry from Columbus?

Gen. MALONE. Right here [indicating on map]. Here is the initial installation for the school at this point [indicating]. We considered that future development would be northwards and that the development of the barracks would be in this direction [indicating]; the sewage line and water line run right straight along there [indicating] and consequently we can shelter within this area 2,400 students. We expect that the National Guard divisions will march each summer to this area for their annual maneuvers and consequently this space is left open for that purpose. We believe we have a very fine and comprehensive plan for the development of this institution. Although, as I stated before, I do not expect and nobody expects that quarters will be erected for noncommissioned officers, however this area [indicating] is left for that purpose. It was necessary to have a very definite plan and we allowed 100 for staff and instruction personnel and then we arrived at the conclusion that 515 officers would attend this institution annually. As to the attendance of the National Guard, we assumed that the

policy of the bureau which decides on the National Guard matters, will depend entirely on the appropriations made available by Congress. In the coming year the Chief of the Militia Bureau believes he can send 75 National Guard officers for each class, extending over a period of about four months. The same principle applies in regard to the reserve officers, and allowing 2 per cent of all of them to attend this institution would imply an attendance of 464 annually.

There is no appropriation available at the present time to permit of their attendance and therefore they were not considered. There are 16,830 Infantry officers in the Reserve Corps; 34 of whom are colonels and 106 lieutenant colonels, and something must be done to provide for their training. The troop personnel will number 231 officers and 5,136 soldiers, a grand total at the school of 8,599. However, as I stated before, the reserve officers will not attend at the present time and only 75 National Guard officers; this would make a total to 922 officers, 1,950 noncommissioned officers, and 5,136 enlisted men. In order that the most economic method of housing these students might be developed we went into a minute consideration of the subject. I believe Mr. Fields will recall that this group is very well along toward completion and it would be very uneconomic to change it; consequently, no material alterations have been made and the plan is to complete it as begun. It will be on the basis of one room for each officer and will provide a common bath room for every 14 officers. This group, as two of the gentlemen will remember, is far from complete and it is practicable at the present time to change the construction and also more economical, for by so doing we add two officers to each building so that each building will accommodate 16 officers instead of 14. The immediate needs of this institution demand the completion of these buildings at the earliest possible date.

Then the question arose as to how to house the remaining personnel of 922 officers who would attend. Of these 328 will be unmarried, taking the general average, and 594 will be married. By completing these buildings this whole bachelor group of 328 can be placed in the west group and cared for most economically. This group can be converted so that you have a one-room set, a two-room set, or a four-room set. There were some remarks made this morning about the inability to install cooking facilities in temporary quarters. That has been foreseen and we expect to install arrangements whereby families may cook, and when it is not possible, to have a big cafeteria arranged for.

To house the remaining personnel several plans were considered: and this one finally adopted: Five-room apartments have been devised, which will permit two rooms and kitchenette to be used, or three rooms and kitchenette, or five rooms and kitchenette and the other kitchenette used as a closet, so that we may house either nine families or four families or five families, according to the situation as it develops. -

The CHAIRMAN. How long a period will these officers be at this school every year?

Gen. MALONE. Regular officers will attend for practically 10 months; the National Guard and Reserve officers for such period as may be determined by the appropriation made available. We would like to have the National Guard officers for 10 months, but the Militia Bureau says that that is impracticable and that the maximum

period they hope for is 4 months, which will compel us to specialize with the National Guard in order to make machine-gun experts, riflemen, etc., and it will be the policy of the school to meet any demands placed on it by any appropriation made by Congress and which will be utilized to the fullest extent to train the officers sent there.

This group was planned in the beginning for noncommissioned officers, but we expect to finish them for field officers, and make available quarters for 17 field officers. These 51 apartment houses will accommodate 459 officers. Then we have the most modern and most comfortable buildings; 37 buildings; 18 five-room and 19 six-room; therefore in this plan of construction there is but one group of 19 buildings which furnishes to the officers the accommodations contemplated in the Army Regulations. No field officer sets, so-called, have been provided for in this program of construction; no field officer will have any set of quarters which is better than that provided for company officers. The estimate for funds based on the foregoing consideration are included in the little folio I have handed to the committee, which was compiled only a few days ago; therefore, I am not sufficiently familiar with the details to give the committee any very valuable information thereon. The plan calls for a total expenditure of \$7,502,320.

The CHAIRMAN. I understood that one of the officers of the War Department would be up here this afternoon to explain in detail just what amount of money will be asked for this year.

Gen. MALONE. I was authorized to say, by Gen. Jervcy, Director of Operations, that I might appear before the committee this afternoon with the authority of the War Department and present this entire program, and that I was not to ask for any specific sum on this appropriation this year.

Gen. LORD. I am instructed to state that the amount decided on by the Secretary of War will be submitted to the committee later.

The CHAIRMAN. I understood so. Gen. Malone, we are very much obliged to you; that has been very instructive.

Gen. MALONE. I would like to urge the committee to be as liberal as possible; this is construction for the Army. Construction here will be unnecessary elsewhere. There is no duplication. We have now at Camp Benning only one set of quarters for officers; the Bussey home, the commanding officer occupying it; some other officers and noncommissioned officers are occupying little cottages, the negro cabins, on the Bussey estate. We expect to send 530 officers to that school this year; 204 will live in barracks heretofore furnished for the enlisted men and the rest placed in these buildings here [indicating], and it would help the morale of the school tremendously if we could feel that we were to have a sufficient appropriation to complete these buildings.

The CHAIRMAN. In view of the large unexpended balance in the fund for the purchase of land of this kind, I am rather inclined to favor legislation which will reappropriate a sufficient amount of that unexpended balance to be used for such purposes.

Mr. HULL. May I ask whether this money will be used in the utilizing of material already on the ground?

Gen. MALONE. Yes, sir; the material is mostly there on the ground and if not utilized will deteriorate.

Mr. HULL. How much material is there?

Gen. MALONE. There is \$1,557,883.77 worth of material lying there ever since construction was stopped.

Mr. HULL. And unless something is done with it that material will be wasted?

Gen. MALONE. It is deteriorating at a very rapid rate.

The CHAIRMAN. What is the character of the material?

Gen. MALONE. It is building material.

The CHAIRMAN. Lumber, nails, and material of that sort?

Gen. MALONE. Every kind of building material, also tools.

The CHAIRMAN. Is the hardware under any shelter at all?

Gen. MALONE. I believe it is under shelter.

Mr. FIELDS. I will say in that connection that the material at Benning was better cared for than at any other camp we saw on our trip last year, but even at that it will deteriorate.

Mr. HULL. It impressed you that something should be done?

Mr. FIELDS. Decidedly so.

The CHAIRMAN. It is now 5.10 o'clock; is there anybody else?

Gen. LORD. Gen. Mitchell will make a preliminary statement to you in regard to the Air Service; however, he is indisposed this afternoon and could not be here but I have a matter I would like to speak to you about if you care to sit longer.

The CHAIRMAN. We will be glad to hear you.

Gen. LORD. After the declaration of war, when the first disbursing officers were sent overseas, it was a problem as to how to handle the various appropriations at that time. I was in charge of the finance operations of the Quartermaster General's office and our disbursing officers were handling at that time on their books anywhere from 12 to 24 different appropriations and I realized that to cable for funds under these different appropriations would be to load the cable unnecessarily and cause confusion to attempt to find out over the cable the amount needed under any specific appropriation, and taking the problem as it came I gave our disbursing officers only one appropriation, stating that all payments were to be made out of that and the auditor would make the adjustment, charging the proper appropriations.

The Quartermaster Corps was the only corps that took that step. We have on our books always from 400 to 500 active appropriations so that the representatives of the corps carried a number of independent appropriations on their books, and so in addition to overloading the cable, already loaded to its capacity, they were carrying under each separate appropriation a considerable amount of dead money; that is, under certain services they must have money on that particular appropriation. This continued until well along in 1918. After the independent finance service was installed the matter was taken up and I had the records of the Treasury Department studied to see how much dead money we were carrying in the hands of disbursing officers, and found that in 20 months time following the declaration of war that there was placed to the credit of disbursing officers \$15,300,301,283.91. We found that in that time of that amount we had disbursed only \$11,780,026,951.47, and there was, therefore, during that time, idle in the hands of disbursing officers \$3,520,274,332.44. These are actual figures, taken from the records of the Treasury Department. The reason for this accumulation of what we call surplus money, or dead money, was the necessity of carrying certain funds to feel safe under these many different appro-

priations. Of course, this money was not all in the hands of these disbursing officers all this time, but if there for a year and the Treasury Department was obliged to pay 4 per cent interest on it, it would have meant a cost to the Government of \$140,000,000. If we take it for granted that the money was there one-third of the time, or that one-third of the amount was there for a year, it meant a cost of \$35,200,000.

There was then worked out a system of credit overseas which solved the problem so that the disbursing officer carried no money his possession. We worked out a system of working funds so that we would give to the disbursing officers as few appropriations as possible. This consideration has been an important one to the Treasury Department, and on July 25, 1918, there was sent to the chairmen of the Military Affairs Committees a letter, prepared in my office and signed by the Secretary of War, providing for an Army account of advances. This is short and I will read it to the committee:

That the Secretary of War be, and he hereby is, authorized to issue his requisitions for advances to disbursing officers and agents of the Army, under an "Army account of advances," not to exceed the total appropriation for the Army, the amount so advanced to be exclusively used to pay, upon proper vouchers, obligations lawfully payable under the respective appropriations.

Sec. 2. That the amount so advanced be charged to the proper appropriations and returned to "Army account of advances" by pay and counterwarrant. The said charge, however, to particular appropriations shall be limited to the amount appropriated to each.

Sec. 3. That the Auditor for the War Department shall declare the sums due from the several special appropriations upon complete vouchers, as heretofore, according to law; and he shall adjust the said liabilities with the Army account of advances.

Sec. 4. That any balances of existing Army appropriations now available for withdrawal from the Treasury, together with any unexpended balances now charged to disbursing officers or agents of the Army which, under existing law, are available for disbursement, shall, at such time as may be designated by the Secretary of War, be transferred on the books of the Treasury Department to "Army account of advances" and shall be disbursed and accounted for as such.

The method now employed in getting money from the Treasury into the hands of the disbursing officers is through requisition prepared in the office of the Director of Finance. If a disbursing officer wants money I write in the appropriation under which it is to be charged, such as ordnance, etc., because no one disbursing office handles all the funds of a military establishment, and the requisition is drawn stating the amount under the specific appropriation and the Treasury Department credits that money under that specific appropriation to the disbursing officer who keeps the account on his books under that particular appropriation, whether there may be 1 or 24.

We have tried to lump that, as I stated, by giving each disbursing officer a working fund. Under the proposed system the requisition would go in exactly the same form and the Treasury Department would charge the amount under the proper appropriation but would issue the total amount as an "Army account of advances" to the disbursing officer, who then has on his books only one account but under this system established he can only expend the amount authorized under any one appropriation and when the accounts come in charged up against the appropriation and are checked by the Treasury Department. There is no liberalizing of the appropriation, it is just as strict an accounting as under the present system, but in that way it will not be necessary to carry safety money

under the different appropriations. This system has the indorsement of the Treasury Department and will result in a saving of money. May I say in extension that we hope eventually to work out a system of "Advance credits," as we did overseas. That has the approval of the Comptroller of the Treasury as to the principle involved, but we have not succeeded in getting far enough along to present a definite enough statement to the Treasury Department, but this system will reduce by 75 per cent the amount of money we will be obliged to keep in the hands of disbursing officers and relieve the Treasury of that burden.

The CHAIRMAN. And, of course, that will save interest?

Gen. LORD. In every case where the Treasury must hire money to take the place of this dead money in the field. I would say that at the present time we have \$400,000,000 in this dead money.

Mr. FIELDS. And hiring money at 4 per cent?

Gen. LORD. More when necessary.

Mr. McKENZIE. They are paying 4½ per cent now, are they not?

Gen. LORD. I saw where they had advanced the rate and had been obliged to do it.

Mr. McKENZIE. You want that incorporated in this bill?

Gen. LORD. I think it is germane to it; I believe it should be incorporated in this bill in the last paragraph.

The CHAIRMAN. Of course, if it is subject to a point of order, with your explanation we can probably defend it on the floor.

Gen. LORD. I presented this to this committee originally on page 1665. I appeared before the Senate committee and explained this provision, and they introduced a bill which passed the Senate but the signing of the armistice came along and we let it drop.

The CHAIRMAN. If the provision you have drawn can be shown to make a saving for the Government, under the rules probably it would not be subject to a point of order, but I doubt whether the language of the bill as drawn shows a saving. We would probably have to explain it on the floor.

Mr. McKENZIE. If you decided to put it in, an accompanying explanation would be helpful.

Gen. LORD. I might be able to get a statement from the Treasury to go with it.

(The subcommittee thereupon adjourned to meet to-morrow, Tuesday, March 30, 1920, at 10.30 o'clock a. m.)

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Tuesday, March 30, 1920.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman), presiding.

The CHAIRMAN. We will take up this morning the items in reference to the Air Service, beginning on page 9 of the tentative draft of the bill. Gen. Menoher and Gen. Mitchell are here this morning, and we will be glad to hear them.

Gen. LORD. Mr. Chairman, preliminarily to the opening of the hearing I wish to state that the Secretary of War has authorized

Gen. Menoher to sustain before the committee this morning the estimates printed in the bill for \$60,000,000. The estimate of the Air Service is not predicated on the size of the Army. It is one of the estimates that we consider as constant. A board is considering this estimate in connection with the other estimates which have been submitted to the committee to see if in their opinion this and the other items can be reduced, it being the wish of the Secretary of War to present as conservative an estimate to the committee as possible. If any change is later made in this estimate by the Secretary of War, Gen. Menoher and the committee will be notified. But the Secretary of War does not wish that to interfere with the progress of the hearing.

The CHAIRMAN. The estimate sent down to us was really for \$53,831,690, plus \$400,000 for the acquisition of land and also \$5,768,310 for the establishment, construction, enlargement, and improvement of public buildings. Gen. Menoher, we will be very glad, indeed, to hear what you desire to say upon these estimates.

AIR SERVICE.

STATEMENT OF MAJ. GEN. CHARLES T. MENOHER, DIRECTOR OF AIR SERVICE, ACCOMPANIED BY BRIG. GEN. WILLIAM MITCHELL, DIRECTOR OF MILITARY AERONAUTICS, COL. A. L. FULLER, COL. W. E. GILLMORE, COL. C. DE F. CHANDLER, LIEUT. COL. LESLIE MACDILL, COL. HENSLEY.

Gen. MENOHER. Mr. Chairman, I desire first to make a general statement, and then following that I will submit a master sheet giving only to a certain extent, in detail, the various items. Then I will call upon the officers who have made a particular study of these various items to support the items in detail.

This estimate is not prepared on the basis of an air service for an army of 509,000 men. It has been cut down to meet the requirements of an air service consisting of 14,700 enlisted men and 1,300 flying cadets. Those are the figures for the Air Service in the Army reorganization bill which recently was under consideration by this committee and which passed the House. An air service balanced to meet the requirements of an army of 300,000 men requires 38,000 enlisted men and 3,500 cadets. We have made various studies of this subject, and we always arrive at about the same conclusion, and that bears out what Gen. Lord said that this is a fixed proposition, and is not predicated upon any particular sized army.

The legislation proposed for the creation of an army of 509,000 included an air service of 22,000 enlisted men. The inadequacy of this number and the nature of its determination were covered before this committee last year in the hearings on the Army appropriation bill. The estimates submitted to the War Department for the Air Service of 22,000 enlisted men to go with the Army of 509,000 men amounted to \$155,000,000, and included, in round numbers, \$65,000,000 for the purchase of aircraft and certain new airship projects.

Prior to the submission of those estimates to Congress the Director of the Air Service was informed that the total amount had been arbitrarily cut to \$60,000,000. This cut was made necessary by con-

siderations affecting the Army as a whole, rather than the Air Service in particular. With the total cut to \$60,000,000, as now submitted, and based on an air service of 22,000 enlisted men, it was possible to allow only \$5,000,000 for the purchase of airplanes. During the last few days this entire estimate has been cut down and adjusted to an air service of 14,700 enlisted and 1,300 flying cadets as provided for in the Army reorganization bill which recently passed the House. In cutting down the fixed and operating charges for the Air Service to this reduced number of enlisted men, it has been practicable to raise the amount for the purchase of aircraft from approximately \$5,000,000 to \$24,000,000. We have cut out in this estimate practically all of the lighter-than-air equipment, and we have nothing in this estimate for the much-needed construction work at Langley Field and Rockwell Field, Calif., and it is by such reductions as that that we have been able to estimate for the \$24,000,000 for the purchase of new aircraft.

It is desired by this statement to make clear to the committee the fact that this \$60,000,000 estimate is not an estimate for an air service of 509,000 men, but rather for an air service as carried in the Army reorganization bill as passed by the House, and is based on a number of enlisted men for the Air Service which is less than the number required for an Army of 300,000, by 22,000 men. As a result of hearings before this committee in connection with proposed legislation for the appropriation of \$15,000,000 for the purchase of aircraft during the present fiscal year, for which no funds were available from the \$25,000,000 appropriated for the present fiscal year, considerable information has been given to the committee on the inadequacy of the current \$25,000,000 appropriation to meet all the costs of operation, including the disposal of surplus materials which have to be paid from the \$25,000,000. However, a detailed statement will be presented showing the actual expenditures from this appropriation under the several major classes of expenditure.

(The statement referred to is as follows:)

Summary of obligations as of Mar. 23, 1920.

[The appropriation "Air Service, Army, 1920," was for \$25,000,000. Of this amount only \$20,000,000 can be spent, under the law, prior to Apr. 1, 1920. Statement below shows that \$19,429,972.81 has been spent up to Mar. 23, 1920.]

Purpose of itemization.	Amount of itemization.	Obligations.	Balance.
Maintenance and operation of aviation schools.....	\$425,728.00	\$163,463.06	\$289,264.94
Photographic supplies for aerial observers.....	100,000.00	55,422.83	44,577.17
Improvements of aviation stations, balloon schools, and testing plants.....	75,500.00	75,500.00	—
Maintenance and operation of stations.....	2,090,468.26	1,794,746.20	295,722.06
Development of helium.....	696,000.00	677,400.00	18,600.00
Utilities at stations.....	603,200.00	484,814.08	118,385.92
Lease and lands and rental of buildings.....	446,054.53	330,236.65	115,817.88
Salaries and expenses of civilian employees.....	8,797,163.18	7,842,091.97	955,071.21
Experimental and research.....	1,635,625.00	1,587,126.32	48,498.68
Production and purchase of airplanes and their spare parts (this item has been used this year for maintenance).....	1,940,200.00	1,714,834.14	225,365.86
Production and purchase of balloons and airships and their spare parts (this item has been used this year for maintenance).....	830,933.80	307,399.04	523,534.76
Production and purchase of engines and their spare parts (this item has been used this year for maintenance).....	710,166.20	316,373.44	393,792.77
Production of instruments and accessories for aircraft and engines.....	103,284.50	100,208.37	3,076.13
Construction of gas plants, hangars, and repair shops.....	1,594,200.00	1,553,399.49	40,800.51
Purchase, manufacture, and issue of special aviation clothing and similar equipment.....	5,000.00	329.30	4,670.70

Summary of obligations as of Mar. 23, 1920—Continued.

Purpose of itemization.	Amount of itemization.	Obligations.	Balance.
Necessary expenses connected with disposal of surplus material.....	\$2,235,118.62	\$1,805,377.70	\$429,740.92
Services of consulting engineers.....	10,000.00	10,000.00	.....
Establishment of aviation stations in the Philippine Islands.....	350,000.00	324,100.00	25,900.00
Claims for damages not exceeding \$250.....	25,000.00	876.85	24,123.15
Expenses of officers while traveling by air.....	4,000.00	4,000.00	.....
Miscellaneous expenses.....	566,762.47	282,273.38	284,489.09
General reserve.....	1,328,505.44	.....	1,328,505.44
"D. A. S." reserve.....	400,090.00	.....	400,090.00
Total.....	25,000,000.00	19,429,972.81	5,570,027.19
Inland and port storage and shipping facilities.....	1,267,300.00	1,267,285.31	14.69

Taking the present appropriation as a basis, the following show the major increases thereto:

Appropriation for the fiscal year 1920, \$25,000,000; increase to cover all training and operating expenses incident to the training of the Air Service, the cost of repair and maintaining all Air Service equipment, including aircraft and the equipment of tactical units and schools, \$5,500,000; increase in the maintenance of physical plant, including lease of real estate and the operation of utilities at all Air Service stations, and activities, \$500,000.

There is a decrease in the amount expended for rentals and a corresponding increase over the amount here shown in the actual maintenance of buildings and structures which, during the last year, was reduced to a minimum and below reasonable maintenance, because certain fields and plants had not been purchased by the Government. Hence, a desire to spend as little as possible on those plants until the will of Congress in the matter as to purchase had been definitely indicated by legislation.

Increase in experimental development for all classes of aircraft and accessories, \$6,500,000. The estimate for the present fiscal year for this item was \$10,000,000, but it will not be possible to spend more than \$2,000,000 out of the \$25,000,000 for this purpose.

That makes the increase for the purchase of new aircraft \$24,500,000, or a total of \$62,000,000. Then there is to be considered the decrease in the cost of disposal of obsolete and surplus material, amounting to \$2,000,000, making a grand net total of \$60,000,000.

In particular, I desire to invite the attention of the committee to the fact that, in order to set aside the sum of \$24,000,000 out of this \$60,000,000, for the purchase of necessary airplanes for the Air Service, it has been necessary to completely omit from this estimate anything for the development of the airship program. The Air Service has had no funds to permit it to enter this field of aeronautical development which, in foreign countries, reached a stage of development which probably marks the greatest aeronautical development in any field. The rigid and semirigid airships had reached a high stage of development in certain countries prior to the late war. The committee is familiar with the performance of the British R-34, which crossed the Atlantic on its return trip, requiring only 70 hours.

I wish to say to the committee in connection with this that Col. Hensley, who made the trip in the R-34, has spent about six months in Germany recently and has brought back a wonderful amount of information on the development in European countries, especially

in Germany, which is in the lead in aeronautical matters. Col. Hensley is present this morning, and if the committee desires to hear from him at any time he has some very interesting information which he can give to you and he will be available for that purpose. I have been trying to arrange for him to give a little time here in the Capitol, if the Members of Congress desire, and put on a little moving-picture show in order to show the Members the latest development, especially in the construction of all-metal ships. I think it will be of great interest to everybody to know what we are doing, because I know I was very much astonished to find how far they had gotten along in the matter of all-metal airships and in the matter of all-metal construction generally.

Now, to go the estimate, generally. The first general item of the estimate is for general expenses connected with training and operations and amounts to \$8,786,804. This item has been subdivided into maintenance and operation of aviation schools, which includes the purchase of equipment for instruction, purchase of materials and machines for use at these schools, photographic supplies for use in the primary and advanced training schools, and for the operation of squadrons in service; for the maintenance and repair of all flying equipment in use throughout the service, and for the purchase of miscellaneous equipment and supplies which are necessary in the training and operation of the Air Service. The largest subitem in this item is for the maintenance and repair of all the flying equipment, and that amounts to \$7,262,823.

The next item in the estimate is for the maintenance and repair of the physical plant, including the repair of buildings, the maintenance of the flying fields, the purchase of water, light, and power, and the lease of land and rental of buildings, and amounts to \$4,381,608. This is less than 5 per cent of the cost of the buildings maintained.

The next item in the estimate is for the pay and expenses of civilian employees by the Air Service and amounts to \$9,714,743. In addition there are employed 816 employees in the storage and disposal of the immense stocks accumulated by the liquidation of the war contracts, who will cost \$792,000. The legislative, executive, and judicial appropriation act, which has been passed by the House of Representatives, provides for the civilian employees of most of the bureaus of the War Department. The Air Service, however, is not provided for. In view of the present uncertainty of the future status of the Air Service, it has been deemed wise not to attempt to obtain its inclusion in the legislative, executive, and judicial act, but to continue the payment of all its civilian employees out of its own appropriation for one more year.

The next item in the estimate amounts to \$1,000,000 and is for the storage and disposal of the immense stocks of material and partially completed equipment obtained from the liquidation of war contracts and also for the sale of material which is declared surplus from time to time in the Air Service. During the present year the overhead cost of handling this property averaged 5 per cent. It is expected that this record can be bettered during the coming year by the more general employment of auction sales.

The next item in the estimate is for the development of helium and amounts to \$765,860. This project is carried on in connection

with the Navy and the Bureau of Mines and the amount estimated for is the Army's share of expense as apportioned by the helium board.

The next item in the estimate is for the carrying on of experimental and research work and amounts to \$8,286,175. This includes the research and experimental development in both the heavier and lighter than air machines and in medicine.

The next item in the estimate is for the purchase of new aircraft and accessories and amounts to \$24,803,693. Of this amount the largest subitem is for \$23,713,778 for the purchase of airplanes. The attention of Congress has been invited at various times during the year to the fact that the present equipment in airplanes will be entirely exhausted before new equipment can be built. Hearings have been held several times on an emergency bill for the purchase of aircraft. It can not be too strongly stated that there will be a time during the fiscal years 1921 and 1922 when the Army will be entirely without airplanes if we do not get an appropriation for this purpose. This is due to the fact that it takes a long time to produce such highly organized machines.

The next item in the estimate is for the payment of such mileage which is required by the law to be paid from Air Service appropriations and for the actual and necessary expenses of officers when traveling by air as authorized by law, and amounts to \$375,000.

The next item in the estimate is for the purchase of land in the Philippine Islands, for the station at Paranaque, amounting to \$375,000 for about 57 acres. This will provide an absolutely necessary airdrome at Manila.

The next item in the estimate is for new construction, and amounts to \$1,192,000, of which \$667,000 is for the construction of the station at Paranaque, already referred to, and provision for one balloon company at Camp Stotsenburg. The balance of the item is for the construction of technical buildings, including gas plants and hangars, and for sectional barracks along the Mexican border.

The last item of the estimate is for miscellaneous expenditures, including the purchase of professional books and periodicals, the printing of information circulars, engineering manuals and specifications, the procurement of special services in the salvaging of wrecked planes, and for the payment of claims for damages caused by the operation of aircraft, and amounts to \$319,117.

I will insert the master sheet and revised wording for the Air Service part of the bill in the record, Mr. Chairman.

The CHAIRMAN. We will be glad to have that inserted in the record. (The matter referred to is as follows:)

Air Service estimate for fiscal year ending June 30, 1921.—Distribution of costs of items under apportionment Nos. 701 to 721, inclusive, and additional items, grouping to conform to wording of appropriation bill. Prepared Mar. 29, 1920.

Air Service personnel, 16,000; cost		<u>\$60,000,000</u>
701. Maintenance and operation of aviation schools:		
Mechanics schools	\$370,000	
Primary training	83,300	
Depot training	205,250	
Lighter-than-air	150,000	
		<u>808,550</u>

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702. Photographic supplies:		
Primary training.....	\$28,000	
Depot training.....	43,600	
Operations.....	205,950	
		\$277,550
704 B and C. Maintenance and repair of equipment, miscellaneous tools, supplies, etc.:		
Lighter-than-air.....	1,429,600	
Engineering.....	800,000	
Procurement.....	60,500	
Property.....	4,972,723	
		7,262,823
721 F. Miscellaneous equipment: Property.....		137,350
721 G. Miscellaneous supplies:		
Procurement.....	7,000	
Property.....	293,531	
		300,531
Total.....		8,786,804
704 A. Maintenance and repair of buildings:		
Engineering.....	183,825	
Property.....	3,067,220	
		3,251,045
706. Utilities at stations:		
Engineering.....	28,000	
Procurement.....	5,500	
Property.....	910,979	
		944,479
707. Lease of land, rental of buildings: Property.....		186,084
Total.....		4,381,608
708. Pay and expenses civilian employees, 6,889:		
Pay.....	9,464,083	
Travel expenses.....	157,650	
		9,621,743
717. Services of consulting engineers:		
Engineering.....	75,000	
Property.....	18,000	
		93,000
Total.....		9,714,743
Above does not include pay and traveling expenses in connection with material disposal, which is included under "Item 716":		
816 employees.....	\$780,000	
Traveling expenses.....	12,000	
Material disposal.....	792,000	
716. Disposal of surplus material:		
Material disposal division.....		1,000,000
Above includes:		
Salaries and wages.....	780,000	
Traveling expenses.....	12,000	
	792,000	
705. Development of helium: Lighter-than-air.....		765,860
709. Experimental and research:		
Lighter-than-air.....	330,000	
Engineering.....	7,931,175	
Medical.....	25,000	
		8,286,175

710. Production and purchase of aeroplanes and other spare parts: Training and operations.....	\$23, 713, 778	
711. Balloons, airships and spare parts: Lighter-than-air.....	750, 000	
712. Engines and spare parts: Training and operations, lighter-than-air.....	117, 000	
713. Aircraft instruments and accessories: Depot training.....	50, 000	
715. Special aviation clothing: Supply.....	172, 915	
		24, 803, 693
720. Special expenses:		
Air Service officers when traveling by air.....	\$135, 000	
Mileage of Air Service officers.....	240, 000	
		375, 000
Purchase of land: Paranaque.....		375, 000
714. Construction of gas plants, hangars and repair shops:		
Lighter-than-air.....	150, 000	
Property.....	200, 000	
		350, 000
703. Improvements of aviation stations and balloon schools:		
Training.....	40, 000	
Property.....	135, 000	
		175, 000
718. Establishment of aviation stations in Philippine Islands: Operations		667, 000
Total.....		1, 192, 000
721C. Printing:		
Information.....	50, 000	
Engineering.....	50, 000	
Property.....	2, 017	
		102, 017
721D. Publications:		
Information.....	6, 000	
Engineering.....	5, 000	
		11, 000
721E. Services:		
Procurement.....	2, 600	
Property.....	53, 500	
		56, 100
719. Claims for damages:		
Engineering.....	2, 500	
Property.....	147, 500	
		150, 000
Total.....		319, 117
Grand total.....		60, 000, 000

REVISIONS TO AIR SERVICE ARMY BILL AS PUBLISHED IN BOOK OF ESTIMATES.

Page 357: After "Air Service," on line 5, insert the following: "for the payment of actual and necessary expenses of Air Service officers traveling by air as authorized by laws."

Substitute for \$53,831,690 the sum of \$58,433,000.

Insert after line 19 the following: "Provided further, That available information not of a secret nature, which is of value in encouraging the use of aircraft and in building up the aeronautical industry be published, issued, and made available for distribution by the Director of Air Service to such individuals and firms as are engaged in, or contemplate engaging in, legitimate enterprise of an aeronautical nature." (Submitted.)

Next to last paragraph under the heading: "For the acquisition of land, etc.," wording should read as follows:

"For the acquisition of land by purchase or condemnation at the following places: At or in the vicinity of Paranaque, Luzon, P. I., an aviation field at a cost not to exceed \$375,000." (Submitted.)

Last paragraph, wording to read as follows:

"For the establishment, construction, enlargement, and improvement of public buildings and facilities at aviation stations, schools, and depots, including: Ross Field, Arcadia, Calif., \$150,000, including the following structures: Five hangars, at a cost not to exceed for each, \$30,000; for use on Mexican border, six sectionalized barracks and storehouses, \$200,000; Camp Stotsenburg, Luzon, P. I., \$98,025, including as a part thereof one balloon hangar, at a cost not to exceed \$21,000, one barracks for 170 enlisted men, at a cost not to exceed \$25,000; Paranaque, Luzon, P. I., \$568,975, including as a part thereof four barracks, each for 170 enlisted men, at a cost not to exceed for each, \$27,000: *Provided*, That the limit of costs of structures, including officers' quarters as fixed by existing law, shall not be exceeded in the construction herein authorized except as to structures and quarters herein specified, the limit of cost for which shall not exceed the amount herein appropriated for each, respectively, \$1,192,000 (submitted)."

Page 362:

Total number of civilian employees	7,646
Total salaries and wages, as follows:	
Salaries changed from \$5,001,167 to	\$4,845,023
Wages changed from \$5,266,138 to	5,399,070
	¹ 10,244,093

Under the heading "Other objects of expenditure," changed to read as follows:

Traveling expenses of civilian employees	² \$169,650
Services of consulting engineers	93,000
Training and field operations of Air Service troops	8,786,804
Maintenance and operation of physical plant, including aviation stations, repair and supply depots	4,381,608
Salvage and disposal of surplus and obsolete materials	³ 208,000
Helium exploration, conservation and production	765,860
Experimental research, engineering and development	8,286,175
Production new aircraft, engines, and accessories	24,803,693
Expenses of officers traveling by air	135,000
Mileage of officers	240,000
Land for aerodrome in Philippine Islands	375,000
Construction in United States and in insular possessions	1,192,000
Miscellaneous, including claims for damages	319,117
Total	60,000,000

Mr. McKENZIE. If I remember correctly, General, in one part of your statement you said that the total amount of the various items contained in your estimate approximates \$62,000,000?

Gen. MENOHER. \$62,000,000.

Mr. McKENZIE. But that by the sale of surplus material that amount will be reduced to \$60,000,000 and therefore you are only asking us to appropriate \$60,000,000?

Gen. MENOHER. Yes, sir.

Mr. McKENZIE. Has it been the practice of the Aircraft Division of our Military Establishment when surplus sales have been made to turn the proceeds of those sales back into the appropriation for aircraft, or has that money gone into the Treasury as a part of miscellaneous receipts?

Gen. MENOHER. It goes into the Treasury.

Mr. McKENZIE. As a matter of fact, you are really asking for an appropriation of \$62,000,000, are you not?

¹ Includes \$380,000 for salaries and \$400,000 for wages in connection with the salvage and disposal of surplus and obsolete materials.

² Includes \$12,000 for traveling expenses of civilian employees in connection with the salvage and disposal of surplus and obsolete materials.

³ Salaries, wages, and travelling expenses not included.

Gen. MENOHER. No, sir. This estimate is only for \$60,000,000. Col. Fuller has made a special study of that item, and I will ask him to explain it to you.

Col. FULLER. This confusion grows out of a comparison of this estimate with last year's appropriation. That reduction of \$2,000,000 is a reduction in the cost of operating the establishment which sells the surplus material and it has nothing to do with the proceeds from the sales. That is, for the next year we propose that our expenditures for operating the establishment for the sale of surplus material will amount to \$2,000,000 less than the expenditures for the same purpose this year. The proceeds of sales revert to the Treasury.

Mr. MCKENZIE. Right along that line, this is a very interesting subject before this committee in connection with other branches of the service. We have been wondering if, with all the commissioned personnel that we will have in the Air Service, and with your thousands of enlisted men, if it would be possible for you to dispose of some of this surplus material as satisfactorily as it can be done if we hire several hundred civilians to do it. What do you think about that? Do you think you can do that?

Col. FULLER. No, sir; for two reasons. The first reason is that the personnel is so inadequate and so inexperienced in that line of work that it would not be economically conducted, and it would reduce very greatly the use of Air Service organizations, of which a very inadequate number can be provided out of this number of officers and enlisted men. As to the qualifications of the personnel on this work, Col. Gillmore can give you better information than I can because he has charge of it.

Mr. MCKENZIE. This is a clear-cut business proposition we are up against. If you have not the men in your department who can sell surplus material when it is declared surplus and you are handicapped, would there be any objection to turning that property over to the Quartermaster General's Department and let the Quartermaster General's Department sell it?

What we are getting at is this: Is it going to be necessary for this Government, when we have 18,000 commissioned officers after the 1st of July, with an enlisted personnel of high character, to go outside and employ a whole lot of civilians to do a little business for the Government on the ground that the Army is incapable and incompetent to do that? I do not believe the Army is incompetent. I believe we have men in the Army who can handle this business. I believe it is the duty of Congress to cut off that useless expense, under those circumstances. If I remember correctly you have an item in here of something like \$9,000,000 for civilian employees. We have got to draw the line somewhere. We can not hire organizations to parallel the Military Establishment. I believe we have as much intelligence in the Army, in the 18,000 officers who will make up the commissioned personnel, as anywhere else, and I am satisfied that among those 18,000 men we will find men competent to do anything that has got to be done, and I believe they can do it if you assign them to that duty.

Gen. MENOHER. If you do that, that would entirely destroy the Air Service as an air service. We have to have our training; that has to go on. The organization of the service has got to go on, and

if we are going to employ the enlisted men in this kind of work we will have no air force.

Mr. McKENZIE. You would not object to turning your surplus over to some other department in the Army for disposal?

Gen. MENOHER. I would be tickled to death to do that.

The CHAIRMAN. As a matter of fact, that is what you have done in the past.

Gen. MENOHER. In a measure that has been done in the past.

The CHAIRMAN. You did not make the contract for the sale of your surplus airplanes; the director of sales made that contract with the Curtiss Co.?

Gen. MENOHER. Yes.

The CHAIRMAN. The men of your force had nothing to do with that?

Gen. MENOHER. I signed the contract, but it was entirely handled, in every detail, and every detail was approved by, the director of sales, under the direct authority of the Secretary of War.

Mr. McKENZIE. Do you not think that proposition I referred to is feasible?

Gen. MENOHER. I do not believe you would gain anything over the system we have at present. When I said I would be tickled to death to do that, it would mean much less work for us, but I do not believe the Government itself would gain anything by turning it over to the Quartermaster General's Department with the method in vogue at present. As I said, the cost of handling this business last year was about 5 per cent.

Mr. McKENZIE. That 5 per cent might pay pretty good salaries for a large number of men?

Gen. MENOHER. It does require a large number of men to handle the proposition we have to dispose of. We will have \$40,000,000 or \$45,000,000 worth of stuff to handle this year.

Gen. LORD. The total sales of Air Service material up to and including March 19 amounted to \$21,668,119.57.

The CHAIRMAN. Allowing 5 per cent on that, it would be about \$1,000,000?

Gen. MENOHER. Yes, sir.

The CHAIRMAN. General, would you like to have us question you now upon the statement you made at the beginning of your testimony, or would you prefer at this time to go on with some other matter?

Gen. MENOHER. Mr. Chairman, I would prefer to go on with the other matter. It will only take a few moments longer. Before I go further, I would like to invite the attention of the committee to one matter in connection with the question of appropriations. While I do not want and do not care to draw any comparison between the amount allowed for the Army and the amount allowed for the Navy, I would like to call your attention to the fact that this year the Navy received the same appropriation as the Army, namely, \$25,000,000. We have three times the enlisted force allowed and three times the officer force allowed that the Navy has. Therefore, it would seem that it would naturally call for a little larger appropriation. The Navy has practically no physical plant, as compared with ours. Their physical plant will be their airplane carriers in connection with their battleships, whereas we have to tie to the land. It seems to me our appropriation should be very much larger than the Navy

appropriation, so that we may carry on in the same way and be able to stand a comparison as to what we do with the money allowed us, as compared with what the Navy has allowed them.

In this comparison, consideration should be given to the fact that to a very great extent, the peace-time strength of the Navy, especially that pertaining to the fleet, is practically the same as its war strength, i. e., the fleet has in time of peace, ships, guns, ammunition, crews, and aircraft, but that Air Service provided by the House reorganization bill for the Army will have to be expanded 11 times in order to provide that Air Service which will be required with that strength of Army, to which the 300,000 men carried in the House reorganization bill for the Army can be readily expanded largely by filling up units. In this connection, as bearing on the strength of Air Service allowed, it is a significant fact that the expansion of the 300,000 men Army to an Army of 1,250,000, requires an expansion for the Army generally of four times its authorized peace-time strength, whereas the proposed strength of Air Service will have to be expanded 11 times to go with that expanded Army. In this connection special consideration should be given to the well-known fact that Air Service units can not be produced for this expansion as rapidly as can other units of the Army.

I have this master sheet to submit, but if the committee desires to question me on the general statement that I have made I will be glad to answer questions now.

The CHAIRMAN. Have you copies of the master sheet as you call it, for the use of the members of the committee?

Gen. MENOHER. Yes, sir.

The CHAIRMAN. General, I notice that you base your present computations upon an Army of 300,000, which is the number of enlisted men, practically, that we provided for in the Army reorganization bill. Of course, it is exceedingly improbable that we will have a force as large as that in our Army in the next fiscal year. As a matter of fact, enlistments have been going on so slowly as compared to what the military authorities hoped they would be able to secure, that the indication seems to be that we will be lucky if we can maintain an enlisted force during the fiscal year 1921 of 175,000 men.

Predicating, therefore, your estimate upon such an enlisted force, how much more could this amount you have asked for be cut?

Gen. MENOHER. I think, Mr. Chairman, you may have misunderstood my statement in regard to the force on which this is predicated. This estimate is predicated on the force allowed by the bill which recently passed the House, 16,000 enlisted men and 1,514 officers.

The CHAIRMAN. That is for your branch of the service?

Gen. MENOHER. Yes, sir. In regard to the other matter, as I stated before, we have made various studies of this matter of an air service for our Army and every study we make brings us to about the same force as being necessary to carry on an adequate air service, which, as Gen. Lord stated awhile ago, must be in its very nature more or less independent of the size of the Army. It must be of a certain size, to stand alone, or be able to exist. In the matter of personnel, I believe the air service can get all the men that we desire, up to any number, almost. I know last year when we started on a recruiting drive, we found we could get all the men we wanted, and we could have kept that up, I think, almost indefinitely, because the

service is popular. There is a great future for a young man who wants to learn the mechanics of the construction of an airplane and of engines, and I do not think we would have any difficulty in the matter of getting recruits for the Air Service itself.

The CHAIRMAN. I think you are quite right about that. But what challenged my attention was your statement that for any Army of 509,000 men you had made an estimate for an appropriation of \$155,000,000.

Gen. MENOHER. Yes, sir.

The CHAIRMAN. And that when you heard that the Army was cut to practically 300,000 men you reduced your estimate to \$65,000,000.

Gen. MENOHER. No, sir; we did not reduce the estimate. That was done for us. The Air Service allowed for the Army of 509,000 was inadequate for the Army of 300,000.

Gen. LORD. That was done by the Secretary of War.

The CHAIRMAN. The Secretary of War's reduction was predicated upon the proposition that with such a force as practically 300,000 men \$65,000,000 would be adequate for the Air Service. Suppose the force we really have under that bill should be further reduced to 175,000 men. By the Secretary's reasoning I should think that there could be a still further cut in this appropriation. But then I understood Gen. Lord to say that later on somebody representing the Secretary's office might come before this committee and ask for a revision of the figures that are submitted here to-day.

Gen. MENOHER. Gen. Lord made that statement.

The CHAIRMAN. So we will await the action of the Secretary's office in that regard.

Now, you say it is only possible to expend \$5,000,000 for the purpose of airplanes out of this sum?

Gen. MENOHER. No, sir. As submitted now we contemplate using \$24,800,000 for the purchase of airplanes; that is \$23,000,000 for the actual purchase of planes and the remainder of that \$24,000,000 would be for the purchase of accessories.

I will insert in the record at this point a list of planes, engines, and spares and their principal characteristics.

Air Service, Army—Recapitulation.

Personnel, 16,000.....	\$60, 000, 000
Item 710. Production and purchase of airplanes and other spare parts: Training and operation.....	23, 713, 778
Item 711. Balloons, airships, and spare parts: Lighter than air.....	750, 000
Item 712. Engines and spare parts: Lighter than air.....	117, 000
Item 713. Aircraft instruments and accessories: Depot training.....	50, 000
Item 715. Special aviation clothing: Supply.....	172, 915
Total.....	24, 803, 693

1921 estimate for purchase of heavier than aircraft.

Type of plane.	Cost per plane.	Cost of airplane spares per unit.	Cost of motor.	Cost of motor spares per unit.	Total cost.
115 bombers (type similar to Martin bomber).....	\$30,000		(¹)		\$3,450,000
Spares, 45 units.....		\$15,000			675,000
400 pursuit.....	13,800		(²)		5,520,000
Spares, 100 units.....		6,900	(²)		690,000
50 observation.....	17,400		(²)		870,000
Spares, 12½ units.....		8,700	(²)		108,750
50 attack.....	50,000		(¹)		2,500,000
Spares, 12½ units.....		25,000			312,500
20 long-distance bombers.....	150,000		(¹)		3,000,000
Spares, 5 units.....		75,000			375,000
710 motors, 300 horsepower (type similar to 300-horsepower Hispano Suiza motor).....			\$7,000		4,970,000
Spares, 355 units.....				\$3,500	1,242,558
Total.....					23,713,778

¹ On hand.² Motors to be purchased, cost given below.

CHARACTERISTICS OF AIRPLANES TO BE ORDERED.

115 bombers, short distance; Glenn L. Martin type; 2 Liberty, 12 engines; 1,000 pounds bombs; 10,200 pounds, total weight.

400 pursuit (single seater): Ordnance engineering model D: one Hispano-Suiza engine, 300 horsepower; two Browning guns, synchronized; 30-foot span; 2,350 pounds, total weight. Performance: Speed at ground, 147 miles per hour; 10,000 feet, 139 miles per hour; 15,000 feet, 130 miles per hour; 20,000 feet, 121 miles per hour; climb to 20,000 feet, 29 minutes; ceiling, 22,000 feet.

50 observation (2 seater), USXB1A (modified Bristol), one 300 Hispano engine; one synchronized Browning gun; two flexible Lewis guns; total weight, 2,900 pounds; span 39 feet; speed, 125 miles per hour at ground; ceiling, 22,000 feet.

50 attack (3 seater), McCook field type VI, two Liberty motors; complete armor plate protection for crew, gasoline, and engines; armament: one 37 mm. cannon, flexible, mounted in front of armored nacelle; eight flexible Lewis guns, 6 shooting downward and 2 upward.

20 bombers, long distance, (4 or 5 men); McCook field design; six Liberty engines; weight, empty, 20,000 pounds; armament and crew, 2,100 pounds; fuel and bombs, 17,000 pounds; total weight, 39,100 pounds. Range with no bombs, 20 hours; range with 5,000 pounds bombs, 8 hours; span, 120 feet; length, 64 feet; height, 26 feet; speed, 100 miles per hour at 10,000 feet.

The CHAIRMAN. How many planes do you expect to purchase with that amount of money?

Gen. MENOHER. I can give you those figures. We desire to purchase 150 bombers of the Martin type, known as the short-distance bomber, that carries 1,000 pounds of bombs. Then we want to purchase 400 pursuit planes of the single-seater type, of a strictly American design known as the Ordnance Engineering type, equipped with the Hispano-Suiza motor; 50 observation planes, two-seater planes. This is a McCook Field design. It is a modified Bristol, taking the Hispano-Suiza engine. Then we want to get 50 attack planes, of the McCook Field design, taking two Liberty motors, with complete armor for the protection of the crew, the gasoline tank, and the engines. That machine has 37-millimeter guns mounted on it, and 8 Lewis machine guns. It is a very powerful plane. In addition to that, we want to get 20 long-distance bombers, of a McCook Field design, taking six Liberty engines. This is a modification of the program we submitted when we asked for the \$15,000,000. We have had time to carry the experimental design a little further, and

to give the subject a little further study. Those are the planes that we propose to purchase out of this \$24,000,000.

The CHAIRMAN. Can you tell us how much each type of plane you have enumerated will cost?

Gen. MENOHER. The Martin bomber type will cost \$30,000 per plane.

The CHAIRMAN. Is that including the motor, or is it without the motor?

Gen. MENOHER. That does not include the motor, as a rule. We have Liberty engines in sufficient quantity for these planes.

The CHAIRMAN. They cost how much each?

Gen. MENOHER. The cost of those varied from between \$4,000 and \$5,000, up to something over \$6,000. We can say in round numbers \$5,000 is the cost for each one of these engines.

The 400 pursuit type planes cost \$13,000 per plane. The observation type cost \$17,000 per plane, the attack type of planes, armored, cost \$50,000 each, and the long-distance bombers about \$150,000 per plane.

Then in addition to that, we are asking—I did not include that in the other statement—we would expend part of this amount in the purchase of engines. All except one of the planes contemplated take the Hispano-Suiza motor. We have only about 400 of those motors on hand, and to build the necessary number of engines for these planes would require about 800 more engines of the Hispano-Suiza type. We figure on two and one-half engines per plane.

The CHAIRMAN. How much does the Hispano-Suiza type of engine cost?

Gen. MENOHER. \$7,000.

The CHAIRMAN. Are they manufactured in this country?

Gen. MENOHER. Yes, sir; the ones we have were all manufactured here, by the Wright-Martin Aircraft Corporation.

The CHAIRMAN. And the other types of planes use the Liberty engines?

Gen. MENOHER. All those I mentioned except the training planes. We have engines for our training planes.

The CHAIRMAN. In reference to the training planes; have you a considerable number of those still on hand?

Gen. MENOHER. We have a number of the De Havilands still on hand. They are used for advanced training. We have a good many of the Curtiss planes still on hand. We are developing a training type of plane at McCook field. So we are not asking for anything in the training line in this estimate. These are planes we think are necessary to carry on any program that we might have forced upon us. In other words, we want to be prepared.

The CHAIRMAN. You do not contemplate out of this appropriation the construction of any lighter than air craft, of a large size?

Gen. MENOHER. No, sir; not any construction.

The CHAIRMAN. How much would one of those large blimps, as I believe they are called, cost?

Gen. MENOHER. You mean the rigid dirigible?

The CHAIRMAN. Yes.

Gen. MENOHER. In figuring the cost of those, the rule is, I think, to figure about \$1 per cubic foot of the gas, in round numbers. One of 2,000,000 feet of gas would cost about \$2,000,000.

The CHAIRMAN. I suppose you have not heard of any private capital in this country that contemplates that kind of construction for traveling between large cities, such as the European countries are trying to foster?

Gen. MENOHER. We read in the newspapers of various projects of that kind, but nothing I have seen has any basis or foundation, as far as I know. I think that is going a little too deeply for any private capital at present, although they are carrying that on in Europe. That is one reason why I mentioned Col. Hensley's name, because I would like to have him tell the committee what they are doing on the other side. We have nothing in the Army in the way of lighter-than-air machines. The matter of the development of lighter-than-air craft—and by that I mean the rigid airship, the Zeppelin—has been turned over to the Navy, and we are not to make any estimate for construction of stations or for rigid ships until a satisfactory type has been developed in this country by the Navy.

The CHAIRMAN. Out of the appropriation you received last year you built no airplanes at all?

Gen. MENOHER. No, sir; we carried on a great deal of experimental work in our experimental plant at McCook Field.

The CHAIRMAN. There was considerable discussion on the floor of the House, and Members seemed to remember that promises were made that some of that money would be expended for experimentation with heavier-than-air machines. Why were you not able to procure any new machines out of that sum?

Gen. MENOHER. I was not present at the hearing when the statement was made that a promise was given that we would spend a certain amount out of that \$25,000,000, and I have had the records looked up, and I can not find anything in the record of any such promise or statement having been made. It is possible it was made, but I did not make it. I understand that we did submit to the committee a statement as to the allocation of all that money, and I understand that the report that had been submitted was entirely satisfactory. Col. Fickel, our finance officer, is prepared to give you a complete statement of the allocation of all that money.

The CHAIRMAN. Of course, I have only a vague impression of the matter at this time. As a matter of fact, the amount that was allowed in the bill as it passed the House was \$15,000,000, and the higher amount was inserted by the Senate, so that probably the Senate committee had a more definite statement as to the larger amount than the House committee.

Gen. MENOHER. The Senate committee allowed \$40,000,000, Mr. Chairman.

The CHAIRMAN. I remember it very well.

Gen. MENOHER. And in conference the amount of \$25,000,000 was agreed upon.

The CHAIRMAN. As a matter of fact, at one time the House conferees agreed on a \$40,000,000 program, but the House itself failed to agree to that conference report.

Gen. MENOHER. Our estimate was for \$83,000,000. The subcommittee of the Senate committee allowed us \$75,000,000, and the full Senate committee allowed us \$55,000,000. The conferees at first agreed upon \$40,000,000, and then the amount was cut to \$25,000,000.

Our estimate at that time called for \$32,000,000 to carry on what we are now trying to carry on this year with \$25,000,000.

The CHAIRMAN. General, how many aviation fields have you at the present time?

Gen. MENOHER. We have practically all that we had during the war. We are giving them up, and I do not recollect at the moment what the exact number is.

The CHAIRMAN. Could you put in the hearing a statement showing the number of fields you have, the names of the fields, whether they are owned by the Government, or whether the land is leased, and, if leased, how much you are paying per annum for the leased lands, and finally a statement as to how many of these fields you propose to dispose of?

Gen. MENOHER. I have that information.

Air Service real estate.

Project and location.	Area (acres).	Purchase price.	Date of final payment.	Construction cost.	Rent per annum.	Remarks.
Purchased:						
Southern Field, Americus, Ga.....	406.68	\$32,534.40	July 5, 1919	\$1,390,055.40	.....	Temporary storage; heavier than air; aviation general supply depot.
Carlstrom Field, Arcadia, Fla.....	640	5,120.00	June 28, 1919	1,336,160.00	.....	Heavier than air.
Dorr Field, Arcadia, Fla.....	640	5,120.00	do.....	1,520,832.91	.....	Do.
Scott Field, Belleville, Ill.....	622.566	119,285.84	June 26, 1919	1,800,334.26	.....	Temporary storage; heavier than air.
Love Field septic tank, Dallas, Tex.....	1.5	900.00	Mar. 1919	.....	.....	Do.
Ellington Field, Houston, Tex.....	1,277.3	86,178.00	July 3, 1919	2,589,276.45	.....	Heavier than air.
Mitchell Field, Mineola, Long Island.....	442.367	360,310.80	June 27, 1919	5,360,121.98	.....	Do.
Coast defense station, New Dorp, Staten Island, N. Y.....	186.6851	420,041.48	June 6, 1919	8,871,118.48	.....	Lighter than air.
Lanley Field, Hampton, Va.....	1,650	290,000.00	Dec. 1916	.....	.....	Heavier than air.
Ballou School, Lee Hall, Va.....	1,591.64	90,000.00	June 8, 1918	941,359.58	.....	Heavier than air; aviation general supply depot.
Rockwell Field, San Diego, Calif.....	1,230	235,262.00	July 27, 1917	1,454,838.79	.....	Do.
Luke Field, Hawaiian Islands.....	312	.....	June 21, 1918	472,316.49	.....	Heavier than air; aviation repair depot.
Aviation general supply depot, Americus, Ga.....	.....	.....	.....	.....	.....	Do.
Aviation general supply depot, Richmond, Va.....	15.56	19,731.35	June 14, 1919	1,213,313.53	.....	Do.
Aviation general supply depot, Fairfield, Ohio.....	40	8,000.00	June 16, 1917	3,266,330.70	.....	Do.
Kelly Field, No. 1, San Antonio, Tex.....	696.52	156,417.00	July 1917	3,009,893.45	.....	Do.
Aeronautical plant, Long Island City.....	.....	.....	.....	.....	.....	Do.
Aviation repair depot, Montgomery, Ala.....	325	34,137.92	Jan. 9, 1920	712,410.85	.....	Heavier than air; aviation repair depot.
To be purchased, authorized by Congress in H. R. 8319:						
Railway for Scott Field, Belleville, Ill.....	79.1	100.00	.....	.....	.....	Do.
Curtiss elmwood plant, Buffalo, N. Y.....	535	1,904,300.49	.....	.....	.....	Do.
Ellington Field auxiliary, Houston, Tex.....	185.5	40,642.00	.....	.....	.....	Do.
Ross Field, Los Angeles, Calif.....	907.61	55,155.00	.....	526,831.00	.....	Lighter than air.
Park Field, Millington, Tenn.....	971.37	88,400.00	.....	2,128,700.09	.....	Temporary storage; heavier than air.
Chapman Field, Miami, Fla.....	640	71,500.00	.....	1,325,938.93	.....	Heavier than air.
Chanute Field, Rantoul, Ill.....	640	208,000.00	.....	1,214,446.71	.....	Temporary storage; heavier than air.
March Field, Riverside, Calif.....	640	64,000.00	.....	993,014.04	.....	Do.
Mather Field, Sacramento, Calif.....	786.73	78,673.00	.....	841,732.31	.....	Lighter than air.
Brooks Field, San Antonio, Tex.....	955	140,446.00	.....	279,008.33	.....	Heavier than air; aviation general supply depot.
Kelly Field No. 2, San Antonio, Tex.....	1,381.29	349,086.33	.....	.....	.....	Do.
Aviation general supply depot, Little Rock, Ark.....	55	55,000.00	.....	1,048,859.38	.....	Do.
Aviation general supply depot, Middletown, Pa.....	31.2	50,000.00	.....	2,601,887.22	.....	Do.
Aviation general supply depot (portion), Richmond, Va.....	4	5,100.00	.....	.....	.....	Do.
Addition to Lanley, Hampton, Va.....	13,038.81	12,000.00	.....	.....	.....	Do.
Desired for temporary retention:						
Bolling Field, Anacostia, D. C.....	275.92	.....	.....	374,505.84	None.	Heavier than air.
Addition to Scott Field, Belleville, Ill.....	3.55	.....	.....	.....	446.46	Do.
Love Field, Dallas, Tex.....	650	.....	.....	1,341,152.24	4,550.00	Temporary storage; heavier than air.
Anchorage, Dallas, Tex.....	100	.....	.....	.....	25.00	Heavier than air.
Wilbur Wright Field, Dayton (Fairfield), Ohio.....	2,245.2	.....	.....	.....	20,000.00	Temporary storage; heavier than air.

Warehouse site, Dayton, Ohio.....	49.4				1.00	Heavier than air.
Balloon field, Dayton, Ohio.....	80				24.00	Lighter than air.
Flying field, Douglas, Ariz.....	332.6				1,094.32	Do.
Ellington auxiliary No. 2, Houston, Tex.....	333				1,066.00	Do.
Ellington auxiliary No. 3, Houston, Tex.....	394				2,066.00	Do.
Ellington auxiliary No. 6, Houston, Tex.....	20.66				1.00	Heavier than air; aviation repair depot.
Aviation repair depot, Indianapolis, Ind.....	80,000			672,570.83	1.00	Do.
Addition to aviation repair depot, Indianapolis, Ind.....	30,828				1.00	Heavier than air.
Target range for coast field, Los Angeles, Calif.....	80				2,100.00	Lighter than air.
Observation station, Ross field, Los Angeles, Calif.....	3				1.00	Do.
Border patrol station, McAllen, Tex.....	1121				1.00	Heavier than air.
Park field pump house site, Millington, Tenn.....	3.6				Do.	Do.
Aviation repair depot, Millington, Tenn.....	3.3				1,781.66	Do.
Air Service depot, Morrison, Va.....	283.97			2,286,570.61	13,500.00	Temporary storage; heavier than air.
Sedgwick field, Mount Clemens, Mich.....	640			2,332,626.45	1.00	Heavier than air.
Horner patrol field, Nogales, Ariz.....	320				1.00	Do.
Robinson field, San Antonio, Tex.....	386				12.00	Do.
Border patrol field, Sanderson, Tex.....	300				2,240.00	Do.
Convalescent camp, San Diego, Calif.....	100				3,832.10	Do.
Coast field, San Diego, Calif.....	640				1.00	Do.
Green field, San Diego, Calif.....	711.42				520.00	Do.
Light of way to Hookwell, San Diego, Calif.....					1,200.00	Do.
Honor guard, Mass.....	18.25				1,060.80	Do.
Flying field, Weston, Mass.....	380.9				Do.	Do.
San Leon Gunnery School, Houston, Tex.....	4.54				Do.	Do.
Septic tank for Southern, Americus, Ga.....					2,371.90	Temporary storage; heavier than air.
Two abandoned and in process of abandonment:					Do.	Do.
Acceptance field, N. Y.....	1.23			561,187.59	4,431.00	Do.
Warren field, Fort Worth, Tex.....	633			1,347,192.60	4,480.00	Do.
Carruthers field, Fort Worth, Tex.....	688.8			1,194,410.65	1,132.80	Do.
Cullalero field, Fort Worth, Tex.....	1,304.2			1,638,377.97	1,304.20	Do.
Addition field, Lake Charles, La.....	207.88			2,761,614.23	2.00	Heavier than air.
Edwards field, Lake Charles, La.....	860			1,894,030.24	6,460.00	Do.
Hachmont field and Rosewell field, Minneola, Long Island.....	872.676			(6)	15,000.00	Temporary storage; heavier than air.
Addition to Hachmont, Minneola, Long Island.....	128.4			1,381,158.93	3,136.60	Heavier than air.
Twydell field, Montgomery, Ala.....	600			187,000.00	3,700.00	Temporary storage; heavier than air.
Rich field, Waco, Tex.....	1,066.72			1,773,043.37	1,066.72	Do.
Call field, Waco, Tex.....	640			1,383,044.79	1,780.00	Heavier than air.
Addition to Call field, Wichita Falls, Tex.....	3.57				28.00	Do.
Abandoned:						
Auxiliary to Southern field, Americus, Ga.....	208.61				2,066.10	Do.
Cross country field, Austin, Tex.....	170.40				1.00	Do.
Do.....	440				1.00	Do.
Landing field, Beeville, Tex.....	84.9				1.00	Do.
Auxiliary to Scott, Belleville, Ill.....	106.3				1,053.00	Do.

† Leases.
* Included in Mitchell

* Condemnation.
* Estimated.

† Leases being made.
* Lots.

† Exclusive of oyster beds.
* Square feet.

Air Service real estate—Continued.

Project and location.	Area (acres).	Purchase price.	Date of final payment.	Construction cost.	Rent per annum.	Remarks.
Abandoned—Continued.						
Acceptance park, Buffalo, N. Y.	1123				\$2,365.52	Heavier than air.
Bringley Field, Commaek, Long Island.	106				1,447.50	Do.
Auxiliary No. 1 to Love, Dallas, Tex.	111				2,468.00	Do.
Auxiliary No. 2 to Love, Dallas, Tex.	160				3,600.00	Do.
Camp Dick (fair park), Dallas, Tex.	269.5				2.00	Do.
Target range for Camp Dick, Dallas, Tex.	(1)				3.00	Do.
Acceptance park, Dayton, Ohio.	151.83				1.00	Do.
Acceptance park, Detroit, Mich.	310.7				20,001.00	Do.
Addition to acceptance park, Detroit, Mich.	2.34				335.00	Do.
Acceptance park, Elizabeth, N. J.					2,743.00	Do.
Henry J. Damm Field, Babylon, Long Island.	250				5,000.00	Do.
First provisional wing, Hempstead, Long Island.	120.36				1,063.15	Do.
First provisional wing, new bridge site, Nassau County, N. Y.	262.52				2,297.06	Do.
Cross-country field, Plaston, Tex.	26				1.00	Do.
Target range, Fort Worth, Tex.	251.8				2,014.40	Do.
Gunnery range for Tulladero, Fort Worth, Tex.	11,701.96				57,064.08	Do.
Auxiliary to Carruthers Field, Fort Worth, Tex.	224				2,801.00	Do.
Auxiliary No. 2, Carruthers Field, Fort Worth, Tex.	160				1,120.00	Do.
Gunnery range for Carruthers Field, Fort Worth, Tex.	11.9				119.00	Do.
Auxiliary to Barron Field, Fort Worth, Tex.	51.5				600.00	Do.
Do.	24.5				112.50	Do.
Landing field, Hondo, Tex.	61.25				325.00	Do.
Bombing field (auxiliaries 3 and 4), Houston, Tex.	666.31				2,132.19	Do.
Second provisional wing, Houston, Tex.	253.6				1,034.40	Do.
Artillery observation range, Houston, Tex.	12,445				622.20	Do.
Gerstner Field, auxiliary No. 1, Lake Charles, La.	3,360				3,360.00	Do.
Gerstner Field, auxiliary No. 2, Lake Charles, La.	2,460				2,460.00	Do.
Gerstner Field, auxiliary No. 3, Lake Charles, La.	2,460				1,525.32	Do.
Gunnery range for Gerstner, Lake Charles, La.	81.26				1.00	Do.
Auxiliary to Eberts Field, Lonoke, Ark.	120				600.00	Do.
Auxiliary to Park Field, Memphis, Tenn.	100				1,000.00	Do.
Experimental field, Miami, Fla.	20				1.00	Do.
Auxiliary to Taylor Field (No. 1), Montgomery, Ala.	80				560.00	Do.
Auxiliary No. 2, Taylor Field, Montgomery, Ala.	80				320.00	Do.
Auxiliary No. 3, Taylor Field, Montgomery, Ala.	95				675.00	Do.
Gunnery School (38 bases), Mount Clemens, Mich.	700.1				4,200.00	Do.
Florence Field, Omaha, Neb.	23.97				200.00	Lighter than air.
Landing field, Pandora, Tex.	43.93				25.00	Heavier than air.
Essington Field, Philadelphia, Pa.	10.9				1.00	Do.
Auxiliary to Chanute Field, Randolph, Ill.	108				3,606.00	Do.
Balloon warehouse, Richmond, Va.	* 76,000				6,500.00	Lighter than air.

ARMY APPROPRIATION BILL, 1921.

375

	! Leases.	! Sand pit.	! Square feet.	
Baker Field (photographic), Rochester, N. Y.....			101,263	
Auxiliary No. 1 to Baker Field, Calif.....			151.89	Heavier than air.
Camp John W/ser, San Antonio, Tex.....			155	Do.
Addition No. 1 to Camp John W/ser, San Antonio, Tex.....			90.55	Lighter than air.
Addition No. 2 to Camp John W/ser, San Antonio, Tex.....			44	Do.
Addition No. 3 to Camp John W/ser, San Antonio, Tex.....			2	Do.
Auxiliary No. 1 to Brooks Field, San Antonio, Tex.....			207	Do.
Auxiliary No. 2 to Brooks Field, San Antonio, Tex.....			125	Do.
Auxiliary to Kelly Field, San Antonio, Tex.....			151	Do.
Do.....			78.3	Do.
Target range for Kelly Field, San Antonio, Tex.....			442	Do.
Addition to Kelly Field, No. 2, San Antonio, Tex.....			586.1	Do.
Cross-country flying field, San Marcus, Tex.....			21.9	Do.
Missouri Aeronautical School, San Antonio, Tex.....			(¹)	Do.
Landing field, Seylun, Tex.....			40.16	Do.
Cross-country field, Uvalde, Tex.....			44.89	Do.
Cross-country field, Victoria, Tex.....			70.67	Do.
Addition to Camp MacArthur, Waco, Tex.....			118	Do.
Auxiliary to Rich Field, Waco, Tex.....			219	Do.
Lnberry Field, Wantagh, Long Island.....			592	Do.
Auxiliary No. 1 to Payne Field, West Point, Miss.....			206.61	Do.
Auxiliary No. 2 to Payne Field, West Point, Miss.....			118.21	Do.
Auxiliary to Call Field, Wichita Falls, Tex.....			409	Do.

The CHAIRMAN. How many aviation schools have you?

Gen. MENOHER. Two primary schools, one at Carlstrom Field, Fla., and one at March Field, Calif. Then there is a mechanics school at Kelley Field, and we are putting into effect a school of application at Langley Field. We have a complete layout of schools which has just recently been approved by the General Staff, and includes those I have given you.

The CHAIRMAN. What do you propose to teach at the school of application?

Gen. MENOHER. The tactics of the air as distinguished from the mere flying and such things as pertain to that. We have a lighter than air school also, and an observer's school at Ft. Sill for use in connection with the Field Artillery.

The CHAIRMAN. I see you propose to expend \$7,262,823 of the appropriation for the maintenance and repair of equipment, miscellaneous tools, supplies, and so forth. You had a large amount allowed in the appropriation bill last year as it left the House. Do you require such a large amount as that?

Gen. MENOHER. I would like to have Col. Gillmore, who is the supply officer of the Air Service, and who is familiar with that, cover that item and answer that question.

Mr. McKENZIE. May I ask a question in reference to the first item? General, I notice in the item number 701, on what you call the master sheet, under the heading of "Maintenance and operation of aviation schools," you have an estimate of \$370,000 for mechanics schools, \$83,300 for primary training, \$205,250 for depot training, and \$150,000 for lighter than air, making a total of \$808,550.

Gen. MENOHER. Yes, sir.

Mr. McKENZIE. How is that money to be expended, for what purpose?

Gen. MENOHER. I would like to have Gen. Mitchell cover that item. He is prepared to go ahead with that now.

The CHAIRMAN. We will allow Gen. Mitchell to explain that item and then we will ask Col. Gillmore to explain the item I referred to, for maintenance and repair of equipment.

Gen. MITCHELL. Mr. Chairman, the question, as I understand it, is in regard to the expenditure of \$7,262,823 for the upkeep of material.

Mr. McKENZIE. The item I was asking about was the first item, \$808,550. That is the item I was asking about.

Gen. MITCHELL. At the present time we are maintaining two primary schools for the training of pilots, and those primary schools have been organized on the basis of giving the same training that the ground schools formerly did and in addition the flying training. When a cadet leaves those schools he is capable of flying any kind of equipment, and is familiar in a general way with the gun installation, the wireless installation, and with the photographic installation. We have cut down the estimate on those primary schools as far as possible. There is an amount of \$83,300 asked for on this basis, on the number of flying hours that will be given at the two schools, on the basis of 1,300 cadets provided for in the act. That is how that amount is arrived at.

The CHAIRMAN. About how many hours of flying are those cadets supposed to have in a day.

Gen. MITCHELL. About half an hour or forty minutes a day.

Mr. McKENZIE. Perhaps you will understand my question better if I say to you that I am not so much interested in the training you give these young men. I have no doubt but what that is very satisfactory, and also very essential. What I am asking about is how you expend the \$808,000?

Gen. MITCHELL. That is expended on the upkeep of equipment, the maintaining of the airplanes and equipment in those schools. That is \$40,000 at each school. That is all carried in detail on the detailed sheet.

Mr. McKENZIE. How much is paid in salaries to civilian employees?

Gen. MITCHELL. I do not believe that any of that, to amount to anything, is paid to civilian employees. The civilians are all grouped together under another heading. None of that is paid to civilian employees.

Mr. GREENE. What is the idea of having so many separate stations? Is it based upon tactical prevision, that you do not want all your eggs in one basket in case of attack, or on the necessities of the service?

Gen. MITCHELL. The idea is that you can only handle a certain number of airplanes off of a certain field. If you exceed that number the air becomes so full of machines and the ground facilities are so limited that it is impossible to operate. In the second place, we think we ought to have one place on the Pacific coast and one on the Atlantic coast, and as a general proposition we have located those schools in the South, where you can get a maximum number of flying hours during the entire year. So it is predicated primarily on the proposition that you can only operate a certain number of machines in the air from a given field; and, in the second place, that the distribution in that way, we believe, is the better.

Mr. GREENE. Of course, that involves certain overheads and separate maintenance.

Gen. MITCHELL. It involves two overheads. After you get beyond a certain point on the ground you get so that you can not operate in the air. We have had a good deal of experience in this country in that connection.

The CHAIRMAN. If you have a man in the air only 30 to 40 minutes a day, could you not divide the time so that at one field you could take care of all the cadets?

Gen. MITCHELL. No, sir. It depends on the total number of hours in the air. If we have a hundred machines in the air at one particular place, you can not do it.

The CHAIRMAN. At one time?

Gen. MITCHELL. Yes, sir. If you run those at maximum capacity, you will have a couple of hundred.

Mr. McKENZIE. In order to expedite matters, could you not put a statement in the hearing showing how this money is expended?

Col. FULLER. I will give you something as to the preparation of this estimate. It is a very carefully prepared estimate and is based on the accumulation of figures for all air service operations that have been gotten together and carefully analyzed.

(The statement referred to is as follows:)

Air Service—Maintenance and operation of aviation schools—Army.

MECHANICS' SCHOOL.

Mechanics' school, 5,000 graduates per year	\$370,000
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The following provides for upkeep of a single mechanics' training school, with a capacity of 5,000 graduates per year (2,500 students at one time). Average length of course, six months; student days per year, 750,000 days.

Equipment for instruction: Models, charts, drafting supplies, at 5 cents per student day.....	37,500
Subsistence of students—none.....	
Tools (upkeep and replacement), at 1 cent per student day.....	7,500
Materials and instruments: Raw materials consumed—Wood, metal, fabric, chemicals, at 28 cents per student day.....	210,000
Machines (upkeep only): Machinery installation will be equivalent in value to three double-unit fields 3 by \$40,000=\$120,000 upkeep, at 12.5 per cent.....	15,000
Textbooks and books of reference, at \$5 per graduate.....	25,000
Miscellaneous (contingencies), at 10 cents per student day.....	75,000

Total.....	370,000
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Above estimate covers maintenance and operation of a single school with courses varying from 3 to 12 months duration. Prices are based on costs as figured from data from the recent St. Paul school. No provision for installation or construction.

PRIMARY TRAINING.

1,200 students; 600 at each school; 6 months' course; 300 students at each school at one time.....	83,300
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Carlstrom Field and March Field:

Minature range; installation of interior equipment, maintenance and improvement—surveillance range, at \$1,500 each field.....	\$3,000
Models, Nacelles, targets for machine gun range, at \$7,500 each field....	15,000
Puff target apparatus: wire, insulators, receptacles, detonators, at \$5,000 each field.....	10,000
Maps, charts, drafting apparatus, at \$1,000 each.....	2,000
	<u>30,000</u>

Instruments:

Artillery spotters, 6 at \$175 (charges at \$1,100).....	2,200
Sextants and accompanying navigation apparatus, 6 at \$500, per field at \$3,000.....	6,000
Automatic signalers, 6 at \$250 (minimum price estimated), per field at \$1,500.....	3,000
Drift indicators, night flying instruments now being perfected, per field, at \$2,500.....	5,000
Depression angle meters (2) per field, at 400.....	800
	<u>17,000</u>

Text books and books of reference:

Pilot schools: \$2 each 600 students is the basis of estimate for instruction manuals and additions to a technical specialized reference library, at \$1,200 per field.....	2,400
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Miscellaneous:

Small expenditures, local purchases, small school equipment per year, at \$5,000 per field.....	10,000
Intercommunicating devices for helmets, etc., Gosport paraphernalia, etc., at \$9,700 per field.....	19,400
	<u>29,400</u>

Langley Field (photographic school):

For the training of enlisted photographic personnel, maintenance, repair, and upkeep of apparatus. It is assumed that apparatus provided in previous years will still be available; hence this small amount.....	\$2, 000
Assuming that an adequate supply of the "Manuals of Aerial Photography" prepared in the previous fiscal year will be available, it will require, for standard books on photography only.....	500
For replacement of possible loss of highly perishable photographic supplies; for purchase of newly developed photographic apparatus and supplies.....	2, 000
Grand total.....	<u>83, 300</u>

DEPOT TRAINING DIVISION.

Total required..... 205, 250

Explanation.—Fields—Rockwell, Ellington, Post:

The following at each of the above fields for observation, bombing, and pursuit training:

Miniature range and surveillance range, installation, maintenance, and improvement of interior equipment.....	17, 500
Models, targets, nacelles, etc., for machine gunnery.....	17, 500
Puff target apparatus.....	21, 000
Maps, charts, etc.....	7, 000
Camera obscuras, flash guns, etc.....	<u>7, 000</u>
	70, 000

Rockwell Field: Pursuit training, models, targets, nacelles, etc., for aerial gunnery..... 2, 000

Ellington (bombardment) (materials and instruments) bombing sights (gyroscopic, etc.)..... 5, 000

Rockwell Field (pursuit): Night flying apparatus, drift indicators, etc..... 1, 000

Fields—Rockwell, Ellington, Post—Following at each of the above three (3) fields:

Sextants and other navigation instruments.....	7, 000
Artillery spotters.....	7, 700
Automatic signalers.....	10, 500
Depression angle meters.....	2, 800
Miscellaneous instruments.....	<u>7, 000</u>

35, 000

Textbooks and books of reference.—Both observers and pilots will be trained, and coast-defense observers and pilots will require new manuals which will not become available until the year 1920-21:

Pursuit school.....	1, 750
Observation school (pilots and observers).....	3, 500
Coast-defense observation school (pilots and observers).....	3, 500
Bombardment school (pilots and bombers).....	<u>3, 500</u>

Miscellaneous.—The chief items under this head will be for the conduct of service problems to train advanced observers and pilot personnel in field conditions, involving maneuvers, establishment of simulated ground troops, their positions, objectives, headquarters, etc.; involving the establishment "service" fields with portable hangars, temporary operation offices, etc. The figures vary for different fields on account of local conditions:

Small expenditures, local purchases, etc., and miscellaneous items and for the purposes outlined in the preceding subparagraph.....	
Ellington Field.....	30, 000
Rockwell and Post Fields, \$25,000 each.....	<u>50, 000</u>

Total..... 205, 250

BALLOON (LIGHTER THAN AIR).

Equipment for instruction: Maps, blackboards, drawing and optical instruments, stereoptican projectors; five schools estimated at \$6,000 per school.. 30, 000

Material and instruments: Smoke bombs, Pierce guns, chemicals and equipment for hydrogen testing, fabric testing, and strength testing, purchase of new types of balloon instruments, replacement of balloon instruments used by commissioned and enlisted students; five schools estimated at \$6,000 per school.....	\$30,000
Machines: Machine tools for engine and airship repairs at Langley and Brooks Fields airship stations in United States, including machines for sewing balloon fabrics; two stations, at \$15,000 per station.....	30,000
Textbooks and books of reference: Purchase of textbooks for commissioned and enlisted personnel, reference books for school libraries, subscriptions to technical magazines: five schools estimated at \$2,000 per school.....	10,000
Miscellaneous: Repairs and replacements to water, gas, electrolytic and silicol hydrogen generating apparatus at balloon schools: five schools, at \$10,000 per school.....	50,000
Total.....	150,000

The CHAIRMAN. We would like to hear now about the item of \$7,262,823 for maintenance and repair of equipment, miscellaneous tools, supplies, etc., which I understand Col. Gillmore can explain.

Col. GILLMORE. The first item under that is \$1,429,600 for the maintenance and repair of equipment of lighter than air; purchase and manufacture of hydrogen gas for nonrigid and semirigid types, which amounts to \$408,600.

The CHAIRMAN. Have you any of the semirigid types?

Col. GILLMORE. We have at Langley Field three ships now. We contemplate before the end of this year having six ships.

The CHAIRMAN. Where are you going to get them?

Col. GILLMORE. We will take them over from the Navy. They are not the large rigid type.

The CHAIRMAN. You will buy them from the Navy?

Col. GILLMORE. Yes, sir; they were purchased through the Navy out of this current year's appropriation.

Mr. McKENZIE. You use this for training purposes?

Col. GILLMORE. Yes, sir.

Mr. GREENE. Is the so-called blimp in any sense the machine you are describing?

Col. GILLMORE. That is a smaller ship; it is not a rigid dirigible.

Mr. GREENE. It is a balloon type?

Col. GILLMORE. Yes, sir; that is, it has no framework.

Gen. MENOHER. The blimp is the smaller nonrigid airship. There is the rigid type, which is entirely of rigid construction such as the Zeppelin; then we have a semirigid type, which has a frame underneath. Then there is the nonrigid type in which there is no frame whatever, and the shape is determined by the shape of the envelope and the inflation that is given to it. That is the nonrigid type, which is termed the "blimp."

Col. FULLER. You get a good comparison from the cost. The small blimp, the nonrigid type, costs \$75,000, and the rigid type costs \$2,000,000.

Gen. MENOHER. The lighter than air includes all balloons for use with the Coast Artillery.

The CHAIRMAN. And also for observation balloons?

Gen. MENOHER. That is what I mean; it includes observation balloons.

Mr. GREENE. The popular conception of the balloon is as a sphere. Is that passing out of practical application for military purposes?

Gen. MENOHER. The spherical balloon?

Mr. GREENE. Yes.

Gen. MENOHER. Yes, sir.

Mr. GREENE. They are all of the sausage type now.

Gen. MENOHER. Yes, sir. That is controlled, and the other is not. It holds its position in the wind. It has fins for that particular purpose—to hold it steadily in the air.

The CHAIRMAN. We will be glad to have you proceed, Col. Gillmore.

Col. GILLMORE. We expect to operate 13 of this nonrigid and semirigid type at Langley Field, at Brooks Field, and the Mexican border, where our balloon activities are assembled. For the maintenance and operation of those ships the estimate is \$875,000.

Then we have an item for the purchase of a special fire engine for the protection of the balloon school fields, amounting to \$10,000 each, or \$50,000 in all; for the maintenance and repair of balloon equipment, including the smaller balloon tenders, parachutes, and so forth, amounting to \$96,000. There are 32 balloon companies in the Air Service organization. That makes a total of \$1,429,600.

Mr. GREENE. What is the reason for separate balloon stations?

Col. GILLMORE. Separate from the air stations?

Mr. GREENE. Along the line of the question asked you before, are you getting the air so full of balloons that you can not operate them all at one field?

Col. FULLER. May I explain that? There have been quite a number of accidents caused at places where it became necessary during the war to operate balloons with airplanes working with the artillery, by airplanes running into the balloon cable; and one of the approved methods of preventing an attack on a place by airplanes is to put up a line of balloons carrying up cables, so that the planes will run into them. That was done in London and Paris.

Mr. GREENE. I was not referring to the use of airplanes. I can appreciate the greater mobility of the airplanes, and the necessity for keeping them in motion. I was thinking of the anchored balloons, whether you would have a sufficient number of them up at one training field to make it necessary to have separate balloon training fields.

The CHAIRMAN. Along that line, Gen. Mitchell testified that you had training fields for the heavier than air machines. Col. Gilmore says you have four fields for the lighter than air machines.

Gen. MENOHER. Col. Chandler can answer that.

Col. CHANDLER. One reason we have these stations separate is for tactical purposes. These companies are employed with coast defense units or with organized divisions. So we wish to distribute stations in the different parts of the country. If we have only one balloon station and that in California, it would then be necessary to send companies across the continent for service on the Atlantic coast; the same objection would apply to the mileage of the officers.

The CHAIRMAN. Would the saving in transportation be offset by the cost of the overhead?

Col. CHANDLER. That same question would apply to all of the Army. If you go on that basis we might put the entire army at one station.

The CHAIRMAN. We probably would not have room enough to keep the whole army in one stretch of territory.

Gen. MITCHELL. I would like to interpose a word there. Every tactical division has a balloon as a part of it, and every coast defense area has a base line over which or along which we send balloons. Of the stations that have been mentioned here, the one on the Pacific coast, Ross Field, has the balloons that are to be used on the Pacific coast for the tactical divisions and coast defense. I think eventually when the balloons are assigned to the division organizations we can cut down on the number of balloon stations. The same thing applies to the balloon stations on the York Peninsula, Lee Hall. The station at Omaha, Nebr., as used as a balloon experiment station. The balloon company officer has to learn to run a winch and things of that sort, and the training of the balloon company officer is specialized. The balloon station on the Mexican border at Brooks Field is to keep the balloons assigned for patrol work, and I think eventually when we assign the balloons permanently to the proper divisions and you provide that appropriation which Gen. Menoher has asked from the subcommittee on fortifications, we may be able to cut these things down.

The CHAIRMAN. By the by, how much is Gen. Menoher asking for balloons with the Coast Artillery?

Gen. MITCHELL. He is not asking any for balloons themselves. He is asking for the location for them, and the instruction necessary to go with them.

Gen. MENOHER. We asked for money for the purchase of two small plots of land at Narragansett Bay. All the other balloons will be stationed on land owned by the Government.

Col. FULLER. None of that is in this estimate.

Mr. GREENE. You have touched on the very thing I was going to get to. The questions we ask may seem to be rather crude because we are laymen. I can see the distinction between the amount of time necessary for training and the various appliances necessary for training in the heavier-than-air machine, and yet a layman would be rather put to it to understand why you want an extensive plant for training for the balloon service. We would associate the planes with observation and other tactical purposes with the various units, and would suppose they would get their training with them.

Gen. MITCHELL. That is correct.

Mr. GREENE. Therefore if we have the contemplated division of our continental forces into these divisions, with regional training of all the elements of a division together, why is it necessary to go very extensively into such permanent foundations for balloon schools, when the better purpose of the balloon men themselves will be served by being trained with the men and the units they are going to operate with?

Gen. MITCHELL. You are right about that. The Government has these places which are used as training points for observers. There are two things in the training of a balloon company. One is the training of the company officers, and the other is the training of observers so that the balloon company can be used both as a tactical unit and as a school, and in that way it is different from the heavier-than-air units. We continued the training of the balloon companies right up on the front. You might regard these various locations throughout the country as places for training the nuclei required for the infantry divisions when they become active.

The divisions are divisions only in name now. They have no men and no means of operating. The only troops we are really operating with now are the Coast Artillery troops and the troops on the Mexican border, and they are actually operating with those troops. Then it may be more convenient to station the balloon companies in central points when the future divisions are organized, because there they would be so split up that they would not be brought together except at certain times during the year for training, and it may be better to assign the balloon companies to the divisions for training.

The CHAIRMAN. How many men are in a balloon company?

Gen. MITCHELL. About 180. It takes about 200 men to keep up a balloon in the field.

Mr. GREENE. Do these appropriations contemplate anything like laying down a permanent structure for these balloon stations?

Gen. MITCHELL. Nothing of that kind. These estimates have been cut down to rock bottom.

Gen. MENOHER. That applies to our heavier-than-air schools. We have those plants, and we selected those fields for that purpose and are maintaining them. We are ready to go on with them now.

Col. FULLER. There are only two observation balloon schools; the others are airship schools and an experimental station at Fort Omaha, Nebr.

Gen. MITCHELL. I think the committee would like to know about what has been done last year from almost nothing. A great deal has been accomplished in the Air Service. We would like to have you know what has been accomplished and what will be done in the future.

Gen. MENOHER. I would like to have Gen. Mitchell tell the committee what has been accomplished in the Air Service during the past year. I think it would be very interesting to the committee to know what we have been doing. We have done a good deal of work.

The CHAIRMAN. I think that will be a very good idea, but I think we ought to let Col. Gillmore finish his explanation of this item.

Col. GILLMORE. The next item is for repairs to our engine plant at Long Island City and the upkeep of it. This is a plant in which there is an investment of about \$3,000,000, and we estimate for the entire upkeep and repair work of that plant, \$60,500.

The next item is the big item, Mr. Chairman. That is for maintenance and repair of equipment, miscellaneous tools, supplies, and airplane parts for repairs, and our estimate for that item is \$936,000. We estimate for utility parts \$180,000; for metal supplies, \$93,000; for miscellaneous items, \$14,000; for paint, dope, and varnish, \$62,000; for engine repairs and replacement and new parts, which is the major item in maintaining the Air Service or the equipment, and the amount for that item is \$3,435,000. For magneto repairs we estimate \$85,000, and for miscellaneous items, oils, etc., \$164,000, making a total of \$1,972,723.

During the past year that item of maintenance has been lowered because we have a great supply of spares on hand that were left over on some of those engines. For this next year we find that we have to purchase a great many more articles than we had to purchase during the past year for the upkeep of our flying equipment.

The next large item is the amount for airplane parts—that is, not motor parts—and the amount for that item is \$936,300. If you want

me to go into more detail as to what the parts are that we estimate we will have to purchase, based on our knowledge of maintenance for the past year, I can give you those details.

The CHAIRMAN. I think the House, as well as this committee, would like to know as much as you can give us in the matter of detail in regard to these appropriations. This is a very considerable sum and I think we ought to have all the information you can give us as to how the amounts are to be expended.

Col. GILLMORE. Our maintenance is predicated on a program of 300,000 flying hours for the next year in our training and operations work. We have kept a very careful set of records on what it costs to maintain and operate airships and what it costs for spare parts, and on that knowledge we are able to break down a large amount and divide it on the basis of 300,000 flying hours, and are able to tell exactly about what repairs we have got to make.

Mr. GREENE. I would like to know the mathematical reason for taking flying hours as the basis for reckoning for any other expense, whether flying or not.

Col. GILLMORE. In operating the planes, Mr. Greene, about the best basis we can take is the flying hours, in order to get an estimate as to what it is going to cost us to keep these ships in the air for that number of hours, taking our records, and all our records are based on the number of hours in the air.

Mr. GREENE. I know you call it that, but I do not know how you arrive at it. It seems to me in the life of a machine and of the accessories the greater part of the time is perhaps spent on the ground.

Col. GILLMORE. Yes, sir.

Mr. GREENE. At the most, they are susceptible to deterioration and the ravages of the elements and the accidents of man's mishandling and various other sorts of things which lead to their gradual uselessness. The machine must pass out from its availability as a superior type gradually to the junk pile. How can those elements of decay and replacements be computed on a flying-hour basis?

Col. GILLMORE. We figure that we have to use practically the same equipment for the next year that we have used for the past year—that is, the De Havilland 4's for the service planes, and a few SE-5's and Spads for service work, and the training work will be carried on with the H's or the D's, that is the JN 4H's or the JN 4D's. Knowing what the usual run of machines will do on a certain number of hours' work, you can figure that a machine will run a certain number of hours without your having to make a complete overhaul, and in that particular overhaul you have to replace a certain number of parts.

The CHAIRMAN. And the gasoline and oil will have to be computed on the number of hours in the air?

Col. GILLMORE. The consumption of gasoline and oil will be computed on a certain number of hours in the air on a certain type of machine, and the repairs come down to that. When a plane is in the hangar and is not being used, there is not much cost.

Mr. GREENE. It is passing out of availability right along. It is shrinking in its value as a once superior type. It is deteriorating. How does that element of cost come into that?

Gen. MITCHELL. When we get a certain number of airplanes they are all paid for when you get them, and you have got to keep those operating. You can charge the whole amount you paid for them off of your books. That amount has been expended, and you have the

airplanes in its place. We figure that they are going to last a certain time. This cost that Col. Gillmore asked for is to keep those planes operating and flying in the air, and if we fly those planes a certain number of hours we can tell about what the upkeep of those planes will be in the matter of gasoline and supplies of that kind, and we have figured out an average number of crashes for a certain number of hours, and we figure that as loss. This is only for the upkeep and operation of them.

Mr. GREENE. It does not matter so much, except that I have been hearing a good many times of all sorts of ratios that tend to bear out the impression that they are a false basis of estimate, and I think that sometimes they even mislead the people who propose them and the people who want to support the estimate for the appropriations.

Gen. MITCHELL. That is the basis of his figures and not the minute detail he is thinking of. It is based actually on the number of operating hours those machines do fly in the air.

Mr. GREENE. I am not endeavoring to dispute it, I am simply trying to get some information about it. I do not see how the other elements that prevent them from putting the machines in the air, or delay them in putting them in the air, making necessary certain other expenditures because they are not ready to go into the air, can be computed on a flying hour basis.

Gen. MITCHELL. It would not, likely.

Mr. GREENE. No crash is involved in that.

The CHAIRMAN. Would not the situation which Mr. Greene refers to be like that which pertains to a ship. The moment a ship is turned over to the owner it is paid for, it is his property, and it begins to deteriorate? Every year the owner writes off a certain percentage of the cost as loss, whether the ship goes on a voyage or whether it lays at anchor at a given place.

Mr. GREENE. But you are now dealing with a phase of bookkeeping which involves original stock and the returns upon the original investment and the plant investment. He is not proposing that. He is talking about operation, which is another thing altogether, and there are no costs which enter into the cost of operation which are involved in the mobility of the operation itself.

Col. GILMORE. When we speak of this equipment, we have 300,000 hours, and we can say that, based on our past experience, it is going to cost this much money to operate with that for 300,000 hours. We have wiped out the original cost of the equipment.

Mr. GREENE. I am not talking about the profit and loss side of it at all.

Col. GILMORE. It is like the ship which the chairman spoke of. The owner can estimate what it is going to cost him to operate that ship if he has it make so many voyages. If it is in the harbor, it will not cost him that much.

Mr. GREENE. But this is what Mr. Kahn suggested, that the owner having made a certain investment for the purpose of making a profit on it now takes into his plant accounting the original expenditure for the ship and begins to charge off so much, estimating what the probable life and usefulness of the ship will be before he no longer makes a profit on it and when it is no longer profitable to repair it.

You are trying to get money from us to keep alive machines in the air, but they are not in the air all the time. Yet you figure the

basis of cost upon the time when they are in the air, whereas it seems to me they are susceptible to certain losses when they are on the ground, and they are on the ground most of the time.

Gen. MITCHELL. This is only based on the ships with actual operating units that are flying in the air, or ships assigned to units flying in the air.

Mr. MCKENZIE. I think so far as this committee is concerned, from a practical standpoint we should take your estimate of 300,000 flying hours as your basis. If we want to make a guess and say that you only fly 150,000 hours, we can just cut that in two.

Col. GILLMORE. You just cut that in two; yes.

Mr. GREENE. I do not want to appear absurd in the record on this proposition. I do not question your estimate. I am only curious to know why you do not take into consideration the fact that there is a certain amount of wastage to be charged off against maintenance as well as against replacement of plant.

Mr. FIELDS. You had to employ some method of arriving at a ratio of depreciation to operating expense, and I suppose the method you employed is the one you consider the most feasible.

Col. GILLMORE. When it is junked it is no longer worth repairing.

Gen. MENOHER. You should remember that this is based on the experience of last year, on the number of flying hours. There are other items that enter into the calculation, but if it is determined by past experience on the number of flying hours it does form a correct basis.

Mr. GREENE. Does a livery stable keeper estimate the cost of operation of live stock by the number of hours they are on the road earning money for him?

Gen. MENOHER. Not entirely; he can not do that. That is what I was trying to say. But that would be based on his past experience, and that would be a pretty fair basis on which to make his calculation.

Mr. FIELDS. It would be on his equipment, largely.

The CHAIRMAN. How do foreign nations do that?

Gen. MENOHER. I understand they do it in the same way we are doing it. Take it as an abstract proposition; you can see how this is not complete. But as it is based on past experience in flying hours, you can see how it forms a direct basis for the calculation.

The CHAIRMAN. Will Col. Gillmore kindly finish his résumé of the figures he was explaining?

Mr. MCKENZIE. Of course, this includes the spare parts to take care of machines. What has been your experience—take a machine that would cost, say, \$15,000 when you buy it new. If you undertake to replace it from time to time with spare parts until you get a complete machine replaced with spare parts, will it cost \$75,000?

Col. GILLMORE. Say we rebuilt it entirely with spare parts?

Mr. MCKENZIE. Yes.

Col. GILLMORE. It would not cost that much with the labor you get in the shops in production, but it would cost you over \$15,000.

Mr. MCKENZIE. In other words, the cost of spare parts is way out of proportion to the original cost.

Col. GILLMORE. To the cost of the original article that comes through on production orders.

Mr. MCKENZIE. And the manufacture of spare parts and the manufacturer of airplanes figures, of course, that the larger profits will come from the sale of the spare parts, is that not true?

Col. GILLMORE. I think that would be true if they were in that position. But right now there are no manufacturers of airplanes who make spare parts.

The CHAIRMAN. When you originally began to put out bids for the purchase of airplanes during the war you not alone provided that he should furnish the plane but also the spare parts?

Col. GILLMORE. Yes, sir. We had what we called lists which included certain things that we knew would wear out.

The CHAIRMAN. In regard to these planes of which you have been speaking and the ones of which Gen. Menoher has been speaking, some of them costing \$30,000, and some of them as much as \$150,000, would that figure include the spare parts as well as the plane itself?

Col. GILLMORE. No, sir. There is an item in there for spare parts for them.

The CHAIRMAN. How much is that item?

Col. GILLMORE. That is \$30,000 on the big plane.

The CHAIRMAN. You can put the figure for those different machines in the hearing along with the other figures.

Gen. MITCHELL. You can use an ordinary rule of thumb on all these airplanes. When an airplane is issued to an organization the spare parts accompany it. They are usually about half the cost of the plane. So if the plane cost \$15,000 the spare parts will cost about \$7,500. At the same time you figure on two and one-half motors for each plane, and so you can figure ordinarily that you pay for your ship about half the cost of the ship for the spare parts, and you supply two and one-half motors for each ship. That is the ordinary rule.

Mr. GREENE. But supposing there is a machine which is no longer susceptible to repair?

Gen. MITCHELL. Everything you can get out of that is salvaged.

Mr. GREENE. What becomes of the accompanying spares for that ship?

Gen. MITCHELL. They are turned over to the others.

Mr. GREENE. How long before you get more or less of an accumulation beyond the number of ships you have?

Gen. MITCHELL. It is figured pretty closely on the total number of crashes. We figure on interchanging those things all the way through, and usually there is a little left over on the end.

The CHAIRMAN. Would the possibility of crashes be figured in the two and a half spare motors you speak of?

Gen. MITCHELL. That is exclusive.

The CHAIRMAN. Then Mr. Greene's assumption is correct.

Mr. GREENE. There must be an accumulation of spares if the machine goes down before it becomes useless?

Gen. MITCHELL. On the other hand, there are a great many which extend beyond that, and this is averaged up on that basis.

Mr. GREENE. I do not want my questions to be misunderstood. I am simply trying to find out something about it.

Gen. MITCHELL. We averaged these things on the basis of a group of 100 planes. That is the basis of the thing. One plane probably will not carry that out, but it will average up on a great number of them.

The CHAIRMAN. We will be glad to have you continue your explanation, Col. Gillmore.

Col. GILLMORE. Taking the airplane parts for a thousand airplane hours, and the unit cost of the items that go to make up that item

of \$936,000, Mr. Chairman, there would be two sets of upper-wing panels, the left and the right complete, one each of the engine section panels complete, three sets of the lower-wing panels complete, two sets of struts complete, two sets of landing gears complete, radiators, tail skids, fuel tanks, gasoline tanks, wing skids, etc., for a total number of a thousand airplane hours, that would make \$4,121, and taking 300,000 flying hours at \$4,121, that would make \$1,236,300. We estimate that we have in our possession now of those articles that we have not used up about \$300,000 worth. That brings it down to \$936,300. All these items are made up in the same manner. I do not know whether you want me to take the time of the committee to read each one of those things or not. I can put that in the record, where you can look at it.

The CHAIRMAN. On this sheet we have you have it summarized?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. I think the committee would be glad to have the record for the individual items.

Gen. MENOHER. We have all of these prepared in the same detail as shown by Col. Gillmore.

Air Service—Maintenance and repair of equipment, miscellaneous tools, supplies, etc.

BALLOON (LIGHTER THAN AIR).

Explanation:

For the purchase and manufacture of hydrogen gas, for all observation and balloon companies, nonrigid and semirigid, total of 45,400 cubic feet at \$9 per 1,000	\$408,600
For the maintenance and operation of 13 airships, being 35 per cent of cost price. This percentage is taken from the experience of the Royal Air Force with nonrigid airships.	875,000
For the purchase of five motor fire engines at \$10,000 each, for the five balloon stations.	50,000
For the maintenance and repair of balloon companies equipment, including balloons, winches, tenders, cable, parachutes and all accessories for 32 companies at an average of \$3,000.	96,000
Grand total	1,429,600

BALLOON AND AIRSHIP DIVISION.

Allotments of gas to be needed to operate 32 balloons and 13 airships during the fiscal year 1921:

32 balloon companies operating one 35,000 balloons each need 1,200,000 cubic feet of gas to fill their balloons, and this will have to be repeated at least once each month, therefore times 12 equals a total of 13,440,000 cubic feet.	Cubic feet. 13,440,000
32 balloons will each require 1,000 cubic feet per day to top up or replace lost gas caused by altitude work equals 32,000 times an average of 300 days of service equals.	9,600,000
13 airships of an average capacity of 200,000 cubic feet equals 1,200,000 cubic feet times four re-inflations each year equals.	10,400,000
13 airships requiring 10,000 cubic feet of gas per day to replace gas lost during altitude work equals 130,000 cubic feet per day times an average of 175 days service per year equals.	22,750,000
Total	46,190,000

This figures 1 per cent above our total estimate of 45,400,000 cubic feet.

ENGINEERING.

Maintenance of airplanes and engines.	\$750,000
Miscellaneous tools and supplies, etc.	50,000
Grand total	800,000

Explanation—McCook Field:

Engine and plane maintenance.....	\$750,000
Maintenance of testing hangars, including all repairs to airplanes undergoing tests and current overhaul.....	550,000
Maintenance and repair of all testing apparatus including calibration of instruments.....	25,000
Digest of all complaints from the field reference, failure of all equipment and provision of remedy, including preparation of instructions for the proper handling of all aviation equipment in service, including tests to check complaints.....	100,000
Assembly, repair, and test of foreign airplanes and engines.....	75,000
	<hr/> 750,000

PROCUREMENT.

Repairs to machinery, United States Aeronautical Engineering plant at Long Island, estimated on 2 per cent of a cost of \$3,000,000.....	60,000
Janitor supplies for above plant.....	500
Grand total.....	<hr/> 60,500

RECAPITULATION—PROPERTY DIVISION.

Airplane repairs:	
Airplane parts.....	936,300
Utility parts.....	180,075
Supplies, metal.....	93,300
Supplies, miscellaneous.....	14,885
Supplies, paint, dope, varnish.....	63,150
Total.....	<hr/> 1,287,510
Engine repairs.....	3,435,500
Magneto repairs.....	85,100
Miscellaneous oils, etc.....	164,613
Total.....	<hr/> 4,972,723

Air Service—Maintenance and repair of equipment, miscellaneous tools, supplies, etc.—Fiscal year 1921.

[Explanation: Airplane repairs, amount per 1,000 airplane hours.]

AIRPLANE PARTS.

Quantity.	Unit.	Description.	Unit cost.	Total.
2	Set.....	Upper wing panels (L. & R.), complete.....	\$500.00	\$1,000.00
1	Each.....	Engine section panel.....	200.00	200.00
1	Set.....	Complete.....	20.00	20.00
3	do.....	Lower wing panels (L. & R.), complete.....	400.00	1,200.00
1	do.....	Struts, interplane, complete.....	80.00	80.00
1	do.....	Tail surfaces, complete.....	100.00	100.00
2	do.....	External brace wires.....	80.00	160.00
2	do.....	Control wires, complete.....	40.00	80.00
4	do.....	Sheaves and fair leads.....	18.00	9.00
2	Each.....	Landing gears, complete, less wheels and tires.....	200.00	400.00
2	do.....	Radiators, complete.....	80.00	160.00
2	do.....	Tail skid assembly, complete.....	20.00	40.00
2	do.....	Fuel tank, main.....	75.00	150.00
2	do.....	Auxiliary tank.....	40.00	80.00
1	do.....	Oil tank.....	25.00	25.00
12	do.....	Wing skids.....	1.00	12.00
3	do.....	Wheels.....	40.00	120.00
6	do.....	Tires, casing.....	40.00	240.00
9	do.....	Tubes, inner.....	5.00	45.00
		Total per 1,000 airplane hours.....		4,121.00
		300,000 flying hours, at \$4,121 per 1,000 hours.....		1,236,300.00
		Less estimated amount for spares now in possession of Air Service and on hand, 1921.....		300,000.00
				<hr/> 936,300.00

*Air Service—Maintenance and repair of equipment, miscellaneous tools, supplies, etc.—
Fiscal year 1921—Continued.*

UTILITY PARTS.

Quantity.	Unit.	Description.	Unit cost.	Total.
1	Set.....	Turnbuckles.....	\$1,500.00	\$250.00
10	Gross.....	Bolts, assorted.....	15.00	150.00
10	do.....	Nuts, castellated.....	1.75	21.00
20	do.....	Washers.....	.65	13.00
10	do.....	Clevis pins.....	1.00	10.00
225	M.....	Cotter pins.....	.45	101.25
4	Each.....	Wing pins.....	.75	3.00
10	do.....	Shackles.....	.40	4.00
40	do.....	Thimbles.....	.05	2.00
10	Pounds.....	Nails, copper.....	.45	4.50
10	do.....	Nails, brass.....	.65	6.50
10	Gross.....	Screws, brass.....	3.00	30.00
2	do.....	Grommets, fasteners, etc.....	2.50	5.00
Total per 1,000 airplane hours.....				600.25
300,000 fl. ing hours, at \$600.25 per 1,000 hours.....				180,075.00

SUPPLIES, METAL.

1,000	Feet.....	Aircraft cord.....	\$0.10	\$100.00
150	do.....	Aircraft strand.....	.12	18.00
10	Pounds.....	Safety wire, copper.....	.50	5.00
10	do.....	Safety wire, brass.....	.70	7.00
200	do.....	Steel, cold rolled bar and strip.....	.10	20.00
100	do.....	Steel, machine.....	.10	10.00
100	do.....	Steel, bar.....	.09	9.00
2	do.....	Shim stock.....	1.00	2.00
20	do.....	Aluminum, sheet.....	1.00	20.00
10	do.....	Copper, sheet.....	.50	5.00
10	do.....	Brass, sheet.....	.60	6.00
10	do.....	Tubing, steel.....	.15	1.50
10	do.....	Tubing, copper.....	.75	7.50
400	do.....	Rope.....	.25	100.00
Total per 1,000 airplane hours.....				311.00
300,000 flying hours, at \$311 per 1,000 hours.....				93,300.00

MISCELLANEOUS SUPPLIES (\$14,685).

1	Pounds.....	Beeswax.....	\$0.75	\$0.75
5	Reams.....	Sandpaper.....	1.50	2.50
5	do.....	Emery cloth.....	1.50	7.50
12	Cases.....	Soap paste.....	2.50	30.00
12	Cans.....	Soldering paste.....	.35	4.20
1	Cylinder.....	Oxygen, altitude cylinder.....	4.00	4.00
Total per 1,000 airplane hours.....				48.95
300,000 flying hours, at \$48.95 pr 1,000 hours.....				14,685.00

SUPPLIES—PAINT, DOPE, VARNISH.

30	Gallons.....	Varnish.....	\$1.50	\$45.00
10	do.....	Dope, acetate.....	4.00	40.00
15	do.....	Dope, nitrate.....	2.00	30.00
7	do.....	Wing enamel.....	2.00	14.00
1	do.....	Shellac.....	4.40	4.40
10	do.....	Paint.....	2.00	20.00
Glue:				
1	do.....	Lepage.....	2.70	.90
1	do.....	Hide or Casine.....	1.50	1.50
17	do.....	White lead.....	1.00	17.00
54	do.....	Oil, linseed.....	1.50	8.25
4	do.....	Turpentine.....	.55	2.20
14	do.....	Lamp black in oil.....	1.50	2.25
10	do.....	Acetone.....	2.50	25.00
Total per 1,000 airplane hours.....				210.50
300,000 flying hours at \$210.50 per 1,000 hours.....				63,150.00

*Air Service—Maintenance and repair of equipment, miscellaneous tools, supplies, etc.—
Fiscal year 1921—Continued.*

ENGINE REPAIRS.

Quantity.	Description.	Unit cost.	Total.
5	Camshaft.....	\$100.00	\$500.00
20	Camshaft bearings.....	5.00	100.00
1½	Camshaft drive shaft—upper.....	8.00	10.00
1½	Camshaft drive shaft—lower.....	16.00	20.00
10	Camshaft drive shaft—gears.....	8.00	80.00
1½	Camshaft housing.....	320.00	400.00
1	Camshaft rocker arm.....	48.00	30.00
2½	Carburetors.....	40.00	100.00
10	Connecting rods.....	12.00	120.00
60	do.....	4.00	240.00
5	Crank case—lower half.....	200.00	1,000.00
2½	Crank case—rotary.....	500.00	1,250.00
2½	Crank shafts.....	700.00	1,750.00
3½	Cylinders.....	1,500.00	5,000.00
2½	Gun synchronizer.....	120.00	300.00
2½	Ignition system.....	170.00	425.00
2½	Intake manifolds.....	64.00	40.00
35	Main bearings.....	4.00	140.00
	Miscellaneous, including hardware.....		1,000.00
30	Pistons.....	12.00	360.00
120	Piston rings.....	.50	60.00
120	Pumps—oil.....	80.00	50.00
120	Pumps—water.....	32.00	20.00
60	Spark plugs.....	2.00	240.00
60	Valves.....	6.00	360.00
60	Valve springs.....	.50	30.00
40	Wrist pins.....	4.00	160.00
	Total per 1,000 airplane hours.....		13,785.00
	300,000 flying hours, at \$13,785 per thousand hours.....		4,135,500.00
	Less estimated amount for spares now in possession of Air Service and on hand 1921.....		700,000.00
	Total.....		3,435,500.00

Maintenance and repair of equipment, miscellaneous tools, supplies, etc.—Fiscal year 1921.

Magnetos:

Running.....	\$55,500.00
Starting.....	29,600.00
Total.....	85,100.00

Replacements for magnetos only and does not include any wiring or equipment external to the magneto.

MISCELLANEOUS OILS.

Airplane machine-gun oil:

2,892 planes.
4 guns (2 mounted, 2 reserve).

11,568 guns.
1½ gallons.

17,302 gallons, at 40 cents per gallon..... \$6,920.80
Cutting oil (lard or compound):

6,649 engines.
3 overhauls per year.

19,947
1 gallon per overhaul.

19,947 gallons, at 60 cents per gallon..... 11,968.20

Rust-preventing compound:

2,982 planes.	
2 gallons per year per plane.	
5,784	
6,649 gallons for engines.	
12,433 gallons, at \$1.12 per gallon.....	\$13,924.00
Sperm (many use or 3 in 1):	
6,649 magneto.	2,892 planes.
	3 instruments to plane.
15,325	8,676
1 8-ounce bottle to instrument per year	100 gross 8-ounce bottles, at
gross \$48 per.....	4,800.00
Total.....	37,613.00

Oil and lubrication:

Cost of oil and lubrication equipment at two unit fields...	\$17,000.00
Cost of oil and lubrication equipment at one unit field...	12,000.00
Total value of oil and lubrication equipment to be maintained.....	282,000.00
Equipment of most rapid deterioration is 45 percent of total equipment; therefore count 45 per cent replacements...	127,000.00
	164,613.00

Mr. GREENE. Before you leave the matter of spare parts I want to ask you a question. Is it found by our experience in the trade that the reason the spare parts cost more proportionate to the cost of the of the original machine is probably because the sale of spare parts is against the interests of the manufacturer?

Col. GILLMORE. The only spares we have are those manufactured during the war on the cost-plus basis, and I do not think that matter would enter into it, and every contract we have contemplates that the manufacturer will not make any increase in price on the spare parts he is to make for that unit.

Mr. GREENE. Of course, so far as the spares are concerned, if the same manufacturer furnishes the spares, the spares prolong the life of the original installation, and he is out the part replaced.

Col. GILLMORE. That is a problem we have not yet had to face in the Army because the material we have been using was made during the war. That is all we have had to use so far. Whether we will run into that some day when we have to go into the market for spares is a question. I do not know about that.

Mr. FIELDS. I think, as a general principle, after a man buys his machine he must have spare parts or lose the machine.

Mr. GREENE. I was thinking about the disproportionate cost of the replacements in the original machine.

Mr. FIELDS. Take the case of a mower, with which I have had some experience. A man who makes a mower gets a good deal more for the spare parts than he gets for the mower, and he would rather sell the spare parts.

Col. GILLMORE. That is the fact in the case of automobiles. I heard once that it would cost \$75,000 to buy a Packard car if you bought it by getting all the spare parts and assembling them.

Mr. FIELDS. I understand that it would cost over \$500 to buy a McCormick mower by getting the spare parts, when the original machine was selling for \$55.

Col. GILLMORE. We have not had to face that yet because our spare parts are those that were made on the cost-plus basis and that did not enter into this contract.

Mr. FIELDS. Of course the manufacturer would rather sell the spare parts than to sell the machine whole.

Gen. MITCHELL. Spares have been tried in all sorts of ways. And the spares that have been gotten for the average machine have been bought at the time the machine was purchased. In many instances they tried to make spares by making two machines to keep up one. That is the way we have to do now to some extent. But it has been found more economical to order a certain number of spares than to tear another machine down in order to fix up the first one. On the front lines we often had to send up two machines to keep one going, because of the difficulties in transportation and for other reasons. We have not gotten far enough along in practice yet to get to the point where automobiles are. Possibly we will get to that point in the future.

Col. GILLMORE. You asked awhile ago about the leases for land.

The CHAIRMAN. Yes; that is a very considerable sum, \$4,000,000—

Col. GILLMORE. No, sir; it is \$186,000.

The CHAIRMAN. You will put in the hearing the details of the second item, which totals \$4,381,608?

Col. GILLMORE. Yes, sir.

Air Service.

ARMY.

RECAPITULATION.

Paragraph No. 2, Air Service Army bill.....	\$4,381,608.00
704-A. Maintenance and repair of buildings:	
Engineering.....	\$183,825.00
Property.....	3,067,220.00
	<hr/>
	\$3,251,045.00
706. Utilities at stations:	
Engineering.....	28,000.00
Procurement.....	5,500.00
Property.....	910,979.00
	<hr/>
	944,479.00
707. Lease of land, rental of buildings, property.....	186,084.00
	<hr/>
Total.....	4,381,608.00

MAINTENANCE AND REPAIR OF BUILDING.

ENGINEERING.

McCook Field:

Maintenance, buildings and grounds	\$183,825.00
Buildings (steel hangars) to be painted.....	48,000.00
Roofs to be repaired on main office, assembly building, and hangar	55,000.00
Roads to be recrowned and resurfaced.....	25,000.00
Draining south end of field to be connected to storm sewers.....	12,000.00
Extending gravel take off in front of new hangars	10,000.00
Flying field and grounds: Cutting grass and general maintenance.	33,825.00
	<hr/>
Total.....	183,825.00

PROPERTY DIVISION.

Work falling within the apportionment has been divided into the following headings:

Buildings: Includes maintenance, repair, and alterations to foundations, framing, sheathing, and siding, roof covering, interior trim, hardware, screens, sheet-metal work, painting, and plumbing.

Roads: Includes repairs, resurfacing, and reconstruction of roads.

Drainage: Includes maintenance of present open-ditch drains, regrading of ditches, surfacing of slopes, and the installation and repair of culverts.

Grounds: Includes the keeping of surface of flying fields in condition, the cutting of grass and weeds on fields, grading and sodding of fields and grounds around buildings.

In preparing this estimate the maintenance for a standard field was figured, which was increased to take care of exceptional known conditions at various fields.

Bolling field:

Buildings at this field to be painted, especially hangars, which will have to be refloored as well; roofs repaired.....	\$24,325.00
Roads to be resurfaced and extended to accommodate hangars recently erected.....	13,900.00
Grounds, flying field to be regraded and redrained....	8,340.00
Drainage.....	5,560.00

\$52,125.00

Carlstrom Field:

Buildings to be oil painted and all roofs re-treated...	43,090.00
Roads, main road to be reconstructed and side road resurfaced.....	34,750.00
Drainage, ditches to be restored to original grade and banks sloped and surfaced to prevent filling up....	24,325.00
Grounds, several spots of flying field which hold water to be filled and drained.....	8,340.00

110,505.00

Chanute Field:

Buildings are weathered badly, need painting, roofs relaid.....	44,827.50
Roads reconstructed and resurfaced.....	34,750.00
Drainage.....	3,475.00
Grounds.....	4,865.00

87,917.50

Dorr Field:

Buildings.....	44,827.50
Roads.....	34,750.00
Drainage, ditches to be regraded and slopes surfaced..	24,325.00
Grounds.....	4,865.00

107,377.50

Ellington Field:

Buildings, steel hangars to be floored and painted, buildings to be reroofed.....	88,265.00
Roads to be recrowned and resurfaced.....	41,700.00
Drainage, ditches to be cleaned, concrete culverts installed.....	27,800.00
Grounds.....	9,730.00

167,495.00

France Field, Panama:

Buildings.....	21,545.00
Roads.....	3,475.00
Drainage.....	2,085.00
Grounds, flying field resurfaced.....	4,865.00

31,970.00

Kelly Field:

Buildings painted, screened, roofs recemented, old type hangars reroofed.....	97,300.00
Roads, main roads to be widened and reconstructed, auxiliary roads resurfaced.....	41,700.00

Kelly Field—Continued.

Drainage, open-ditch system to be regraded, catch basins and culverts to be installed to handle storm water.....	\$59,075.00	
Grounds.....	6,950.00	\$205,025.00
Luke Field, Hawaii:		
Buildings.....	18,070.00	
Roads.....	3,475.00	
Drainage.....	2,085.00	
Grounds.....	4,865.00	28,495.00
March Field:		
Building rescreened, painted, roofs recemented.....	43,437.50	
Roads recoiled.....	8,340.00	
Drainage.....	3,475.00	
Grounds.....	4,865.00	60,117.50
Mather field:		
Buildings painted, roof covering relaid.....	44,827.50	
Roads recoiled.....	8,340.00	
Drainage.....	3,475.00	
Grounds.....	4,865.00	61,507.50
Mitchel Field:		
Buildings painted, roof covering recemented, hangars overhauled completely.....	85,832.50	
Roads, resurfaced.....	20,850.00	
Drainage.....	6,950.00	
Grounds.....	6,950.00	120,582.50
Park Field:		
Buildings.....	45,522.50	
Roads redressed.....	34,750.00	
Drainage, pumping station overhauled and levees sodded and reshaped.....	10,425.00	
Grounds.....	4,865.00	95,562.50
Post Field:		
Buildings, painted, roof covering recemented.....	45,175.00	
Roads resurfaced.....	34,750.00	
Drainage.....	6,950.00	
Grounds.....	4,865.00	91,740.00
Rockwell Field:		
Buildings, Monitor ventilators to be installed in mess halls, steel hangars to be completely overhauled....	100,775.00	
Roads redressed.....	13,900.00	
Drainage.....	6,950.00	
Grounds, soil such that flying field has to be rolled ...	6,950.00	128,575.00
Scott Field:		
Buildings.....	49,275.50	
Roads, main road reconstructed, side roads resurfaced.	34,750.00	
Drainage.....	6,950.00	
Grounds.....	4,865.00	95,840.50
Selfridge Field (to be maintained until the policy of Congress is determined):		
Buildings.....	49,275.50	
Roads.....	13,900.00	
Drainage (dyke protecting field from flooding to be reconstructed).....	17,375.00	
Grounds.....	5,360.00	86,110.50

Souther Field:

Buildings painted, rescreened, roof covering re-	
mented.....	\$45,522.50
Roads resurfaced.....	25,325.00
Drainage (ditches restored to original grade).....	8,687.50
Grounds.....	4,865.00

\$83,400.00

Supply depot, Americus:

Buildings (down spouts and leaders have to be re-	
placed and depot roof repaired).....	34,194.00
Roads.....	3,475.00

37,669.00

Supply depot, Americus:

Drainage.....	2,085.00
Grounds.....	1,390.00

3,475.00

Supply depot, Fairfield:

Buildings, heating equipment to be remodeled, floors	
to be installed in warehouses.....	108,559.00
Roads redressed.....	13,900.00
Drainage.....	3,475.00
Grounds.....	1,390.00

127,324.00

Supply depot, Little Rock:

Buildings, steel hangars floored and painted, property	
completely fenced.....	41,144.00
Roads resurfaced.....	8,340.00
Drainage.....	2,085.00
Grounds.....	1,390.00

52,959.00

Supply depot, Middletown:

Buildings, warehouses to have brick fireproof walls	
installed. This depot cares for the greater part of	
expeditionary hangar material.....	98,342.50
Roads resurfaced and reconstructed.....	17,375.00
Drainage.....	6,950.00
Grounds.....	1,390.00

124,057.50

Supply depot, Richmond:

Buildings, expeditionary hangars to be fully equipped	
for storage purposes.....	34,689.00
Roads redressed.....	10,425.00
Drainage.....	2,085.00
Grounds.....	1,390.00

48,789.00

Supply depot, San Antonio:

Buildings, platform of buildings to be reconstructed ..	34,750.00
Roads.....	3,475.00
Drainage.....	2,085.00
Grounds.....	1,390.00

41,700.00

Supply depot, Houston, buildings.....

5,560.00

Supply depot, Los Angeles, buildings.....

3,475.00

Supply depot, Washington, repairs and alterations to interior of buildings.....

5,560.00

Repair depot, Dallas:

Buildings.....	31,622.50
Roads.....	6,950.00
Drainage.....	3,475.00
Grounds.....	695.00

42,742.50

Repair depot, Montgomery:

Buildings.....	37,887.50
Roads, road about field to be completed.....	10,425.00
Drainage, slope adjoining retaining wall and catch	
basin to be stoned.....	6,950.00
Grounds, washouts to be rebuilt and drained.....	7,645.00

62,897.50

Repair depot, Speedway, Indianapolis:		
Buildings.....	\$32,595.50	
Roads.....	4,170.00	
Drainage.....	1,688.00	
Grounds.....	693.00	
		\$39,128.50
Langley Field:		
Buildings, hangars to be painted, floors installed.....	70,000.00	
Roads.....	15,320.00	
Drainage.....	8,841.00	
Grounds.....	3,975.00	
		98,136.00
Brooks field:		
Buildings.....	48,997.50	
Roads.....	8,340.00	
Drainage.....	2,085.00	
Grounds.....	4,170.00	
		63,592.50
Lee Hall, Virginia:		
Buildings.....	32,665.00	
Roads.....	6,950.00	
Drainage.....	3,475.00	
Grounds.....	6,950.00	
		50,040.00
Additions to Scott Field fence.....	550.00	
Douglas, Ariz., and field airship station.....	1,500.00	
Laredo.....	1,500.00	
McAllen.....	1,500.00	
Nogales.....	1,500.00	
Saugus, Mass.....	300.00	
Sanderson, Tex.....	1,500.00	
East Field.....	300.00	
Ream.....	5,000.00	
Stinson and San Antonio, Tex.....	500.00	
Weston, Mass.....	1,500.00	
		15,650.00
Fort Omaha, Nebr.:		
Buildings, balloon hangar overhauled.....	41,700.00	
Roads.....	10,425.00	
Drainage.....	3,475.00	
Grounds.....	2,780.00	
		58,380.00
Ross Field, Los Angeles:		
Buildings.....	46,565.00	
Roads.....	10,425.00	
Drainage.....	2,085.00	
Grounds.....	4,865.00	
		63,940.00
Barron Field (temporary depot):		
Buildings.....	4,378.50	
Roads.....	903.50	
Drainage.....	625.50	
Grounds.....	347.50	
		6,255.00
Love Field (temporary depot):		
Buildings.....	4,378.50	
Roads.....	903.50	
Drainage.....	625.50	
Grounds.....	347.50	
		6,255.00
Rich Field (temporary depot):		
Buildings.....	4,378.50	
Roads.....	903.50	
Drainage.....	625.50	
Grounds.....	347.50	
		6,255.00

Taylor Field (temporary depot):		
Buildings.....	\$4,378.50	
Roads.....	903.50	
Drainage.....	625.50	
Grounds.....	347.50	
		\$6,255.00
Wilbur Wright Field (temporary depot):		
Buildings.....	6,255.00	
Roads.....	1,042.50	
Drainage.....	1,390.00	
Grounds.....	347.50	
		9,035.00
Mexican border:		
Buildings.....	62,550.00	
Drainage.....	15,637.50	
Grounds.....	20,850.00	
		99,037.50
Philippines:		
Buildings.....	39,337.00	
Roads.....	5,907.50	
Drainage.....	5,560.00	
Grounds.....	3,405.00	
		54,210.00
Staten Island:		
Buildings.....	23,838.50	
Roads.....	5,108.25	
Drainage.....	3,405.50	
Grounds.....	1,702.75	
		34,055.00
Oil houses, all fields, for alterations to interior of oil reclaiming plants.....		
		2,988.50
San Francisco, aviation station:		
Buildings.....	23,838.50	
Roads.....	5,108.25	
Drainage.....	3,405.50	
Grounds.....	1,702.75	
		34,055.00
Morrison, Va., supply depot (temporary):		
Buildings.....	30,232.50	
Roads.....	1,042.50	
Drainage.....	3,475.00	
		34,750.00
United States aeronautical engine plant, Long Island City.....		
		28,147.50
Fire system (includes the recharging of all extinguishers and replacement of equipment):		
Bolling Field.....	1,000.00	
Carlstrom Field.....	1,000.00	
Chanute Field.....	1,000.00	
Dorr Field.....	1,000.00	
Ellington Field.....	2,000.00	
France Field.....	1,000.00	
Kelly Field.....	5,000.00	
Luke Field.....	1,000.00	
March Field.....	1,000.00	
Mather Field.....	1,000.00	
Mitchel Field.....	5,000.00	
Park Field.....	1,000.00	
Post Field.....	1,000.00	
		22,000.00
Rockwell Field.....	4,000.00	
Scott Field.....	1,000.00	
Selfridge Field.....	1,200.00	
Souther Field.....	1,000.00	
A. G. S. D., Americus.....	12,000.00	
A. G. S. D., Fairfield.....	12,000.00	
A. G. S. D., Little Rock.....	12,000.00	
A. G. S. D., Middletown.....	15,000.00	

Fire system, etc.—Continued.

A. G. S. D., Richmond.....	\$12,000.00	
A. G. S. D., San Antonio.....	12,000.00	
A. G. S. D., Houston.....	2,000.00	
A. G. S. D., Washington.....	2,000.00	\$86,200.00
A. G. S. D., Los Angeles.....	2,000.00	
Repair depot, Dallas.....	8,000.00	
Repair depot, Montgomery.....	8,000.00	
Repair depot, Speedway.....	8,000.00	
Langley Field.....	10,000.00	
Brooks Field.....	5,000.00	
Lee Hall.....	5,000.00	
Fort Omaha.....	5,000.00	
Ross.....	1,000.00	
Love (temporary depot).....	1,000.00	
Rich (temporary depot).....	1,000.00	54,000.00
Taylor (temporary depot).....	1,000.00	
Wilbur-Wright (temporary depot).....	2,000.00	
Mexican border.....	7,500.00	
Philippines.....	7,000.00	
Staten Island.....	1,000.00	
Morrison.....	1,000.00	19,500.00
Douglas, Ariz.....	500.00	
Laredo, Tex.....	500.00	
McAllen, Tex.....	500.00	
Nogales, Ariz.....	500.00	
Saugus, Mass.....	400.00	
Sanderson, Tex.....	500.00	
East Field, Calif.....	400.00	
Ream Field, Calif.....	1,000.00	
Stinson and San Antonio, Tex.....	300.00	
Weston, Mass.....	300.00	4,900.00
Total.....		3,067,220.00

UTILITIES AT STATIONS.

ENGINEERING.

Light and power.....	25,000.00
Water.....	3,000.00
Total.....	28,000.00

PROCUREMENT.

Light and power.....	5,000.00
Water.....	500.00
Total.....	5,500.00

NOTE.—Sewerage includes the upkeep of sewers and sewage-disposal plants.

Sewers:

Bolling.....	\$1,400.00
Carlstrom.....	2,520.00
Chanute.....	2,520.00
Dorr.....	2,520.00
Ellington.....	5,040.00
France.....	2,520.00
Kelly.....	9,800.00
Luke.....	2,520.00
March.....	2,520.00
Mather.....	2,520.00
Mitchel.....	7,000.00
Park.....	2,520.00

Sewers—Continued.

Post.....	\$2,800.00
Rockwell.....	10,500.00
Scott.....	2,520.00
Selfridge.....	3,500.00
Souther.....	2,520.00
A. G. S. D., Americus.....	4,200.00
A. G. S. D., Fairfield.....	2,100.00
A. G. S. D., Little Rock.....	2,100.00
A. G. S. D., Middletown.....	3,500.00
A. G. S. D., Richmond.....	2,100.00
A. G. S. D., San Antonio.....	2,100.00
A. G. S. D., Houston.....	700.00
A. G. S. D., Los Angeles.....	700.00
A. G. S. D., Washington.....	700.00
Repair depot, Dallas.....	1,680.00
Repair depot, Montgomery.....	2,520.00
Repair depot, Speedway.....	1,750.00
Langley.....	8,400.00
Brooks.....	1,400.00
Lee Hall.....	2,520.00
Fort Omaha.....	2,520.00
Ross.....	3,500.00
Douglas, Ariz.....	600.00
Laredo, Ten.....	600.00
McMillan, Tex.....	600.00
Nogales, Ariz.....	600.00
Saugus, Mass.....	300.00
Sanderson, Tex.....	600.00
East Field, Calif.....	600.00
Ream Field, Calif.....	1,800.00
Weston, Mass.....	300.00
Love Field.....	350.00
Rich.....	350.00
Taylor.....	350.00
Wilbur Wright.....	350.00
Mexican Border.....	5,250.00
Philippines.....	3,500.00
Staten Island.....	350.00
Morrison.....	700.00
Air Ship Station, Langley.....	17,500.00
Airship Station, Brooks.....	17,500.00
Total.....	159,930.00

NOTE.—Water includes the purchase of water, maintenance of water lines, towers, and well pumps.

Water:

Purchase only.....	\$55,000.00
Bolling.....	2,400.00
Carlstrom.....	2,400.00
Chanute.....	2,400.00
Dorr.....	2,400.00
Ellington.....	5,000.00
France.....	2,500.00
Kelly (replacing wooden main).....	15,000.00
Luke.....	2,500.00
March.....	2,400.00
Mather.....	2,400.00
Mitchel.....	2,400.00
Park.....	2,400.00
Post.....	2,400.00
Rockwell.....	2,400.00
Scott.....	2,400.00
Selfridge.....	2,400.00
Souther.....	2,400.00
A. G. S. D. Americus.....	2,400.00

Water—Continued.

A. G. S. D. Fairfield.....	\$3,000.00
A. G. S. D. Little Rock.....	3,000.00
A. G. S. D. Middletown.....	6,000.00
A. G. S. D. Richmond.....	3,000.00
A. G. S. D. San Antonio.....	2,400.00
A. G. S. D. Houston.....	1,000.00
A. G. S. D. Los Angeles.....	6,000.00
A. G. S. D. Washington.....	1,000.00
Repair depot, Dallas.....	2,400.00
Repair depot, Montgomery.....	2,400.00
Repair depot, Speedway.....	2,400.00
Langley.....	15,000.00
Brooks.....	2,400.00
Lee Hall.....	2,400.00
Fort Omaha.....	2,400.00
Ross.....	2,400.00
Love.....	500.00
Rich.....	500.00
Taylor.....	500.00
Wilbur Wright.....	500.00
Mexican border.....	30,000.00
Philippines.....	5,000.00
Staten Island.....	2,000.00
San Francisco.....	2,000.00
Morrison.....	500.00
Airship Station Langley.....	20,000.00
Airship Station Brooks.....	20,000.00
Douglas, Ariz.....	700.00
Laredo, Tex.....	700.00
McAllen, Tex.....	700.00
Nogales, Ariz.....	700.00
Saugus, Mass.....	300.00
Sanderson, Tex.....	700.00
East Field, Calif.....	700.00
Ream Field.....	2,500.00
Weston, Mass.....	300.00
Total.....	259,600.00

Field.	Light and power.	Maintenance.	Total.
Bolling.....	\$2,500.00	\$1,400.00	\$3,900.00
Carlstrom.....	25,550.00	3,150.00	28,700.00
Chanute.....	8,785.70	2,100.00	10,885.70
Dorr.....	25,550.00	2,100.00	27,650.00
Ellington.....	25,856.60	7,000.00	32,856.60
France.....	2,253.00	1,400.00	3,653.00
Kelly.....	21,257.60	10,500.00	31,757.60
Luke.....	2,253.00	1,400.00	3,653.00
March.....	8,942.50	3,150.00	12,092.50
Mather.....	2,677.50	2,100.00	4,777.50
Mitchel.....	3,562.19	7,000.00	10,562.19
Park.....	5,136.65	2,100.00	7,236.65
Post.....	20,631.63	3,500.00	24,131.63
Rockwell.....	4,772.74	10,500.00	15,272.74
Scott.....	7,194.11	2,100.00	9,294.11
Selfridge.....	5,684.87	2,100.00	7,784.87
Souther.....	6,265.00	2,100.00	8,365.00
Americus.....	6,052.33	1,750.00	7,802.33
Fairfield.....	10,573.29	3,500.00	14,073.29
Little Rock.....	3,570.00	2,100.00	5,670.00
Middletown.....	4,292.40	5,600.00	9,892.40
Richmond.....	4,006.10	3,500.00	7,506.10
San Antonio.....	3,843.78	2,100.00	5,943.78
Houston.....	3,500.00	.....	3,500.00
Los Angeles.....	7,000.00	4,200.00	11,200.00
Washington.....	3,500.00	1,400.00	4,900.00
Dallas.....	8,692.11	2,100.00	10,792.11
Montgomery.....	3,747.40	2,100.00	5,847.40
Speedway.....	8,113.00	2,094.40	10,207.40
Langley.....	21,603.58	14,000.00	35,603.58

Field.	Light and power.	Maintenance.	Total.
Brooks.....	\$2,012.06	\$3,500.00	\$5,512.06
Lee Hall.....	4,133.85	3,500.00	7,633.85
Fort Omaha.....	10,987.33	2,100.00	13,087.33
Ross.....	2,633.56	2,100.00	4,733.56
Douglas, Ariz.....	1,500.00		
Laredo, Tex.....	1,000.00		
McAllen, Tex.....	1,000.00		
Nogales, Ariz.....	1,000.00		
Saugus, Mass.....	500.00		
Sanderson, Tex.....	1,000.00		
East Field.....	300.00		
Ream Field.....	3,000.00		
Stinson, Tex., San Antonio.....	500.00		
Weston, Mass.....	1,000.00		
Love.....	1,084.52	210.00	1,294.52
Rich.....	1,251.95	210.00	1,461.95
Taylor.....	751.17	210.00	961.17
Wilbur Wright.....	2,016.70	210.00	2,226.70
Mexican.....	7,000.00	15,750.00	22,750.00
Philippines.....	10,500.00	5,600.00	16,100.00
Staten Island.....	7,000.00	3,500.00	10,500.00
Morrison.....	2,500.00	2,100.00	5,600.00
Total.....	346,506.11	155,744.40	491,449.51

RECAPITULATION—PROPERTY DIVISION.

Sewerage.....	\$159,930.00
Water.....	259,600.00
Light and power.....	491,449.51
Grand total.....	910,979.51

Estimates for fiscal year 1921—Item, "Air Service—Lease of land—Rental of buildings."

LAND PROJECTS.

Location.	Project.	Rent.
Areadia, Fla.....	Target range for Carlstrom Field.....	\$24.00
Belleville, Ill.....	3 additions to Scott Field.....	46.56
Dallas, Tex.....	Anchorage for stack.....	10.00
Do.....	Love Field.....	4,550.00
Dayton, Ohio.....	Wilbur Wright Field.....	20,000.00
Do.....	McCook Field.....	18,070.29
Douglas, Ariz.....	Border-patrol field.....	596.50
Do.....	Balloon field.....	24.00
Houston, Tex.....	Ellington Field.....	
Do.....	Auxiliary No. 2.....	1,064.30
Do.....	Auxiliary No. 5.....	1,065.60
Do.....	Auxiliary No. 6.....	1,132.00
Do.....	San Leon Gunnery School.....	1,168.80
Do.....	4 hay barns (Ellington).....	1,056.00
Indianapolis, Ind.....	Engine and plane repair depot.....	2,066.00
Do.....	Addition to repair depot.....	1.00
Laredo, Tex.....	Border patrol field.....	4.00
Los Angeles, Calif.....	Target range for balloon school.....	1.00
Long Island City.....	Cafeteria building lot.....	1,500.00
McAllen, Tex.....	Border-patrol field.....	1.00
Montgomery, Ala.....	Taylor Field.....	3,200.00
Morrison, Va.....	Supply depot.....	1,765.64
Mount Clemens, Mich.....	Selbridge Field.....	13,500.00
Nogales, Ariz.....	Border patrol field.....	27.00
Saugus, Mass.....	Hangar.....	550.00
Sanderson, Tex.....	Border patrol field.....	1.00
San Diego, Calif.....	Convalescent camp.....	12.00
Do.....	East Field.....	3,240.00
Do.....	East Field gunnery range.....	60.00
Do.....	Ream Field (estimated).....	3,832.10
Do.....	Right of way to Rockwell Field.....	1.00
San Antonio, Tex.....	Stinson Field.....	1.00
Waco, Tex.....	Rich Field.....	6,900.00
Weston, Mass.....	Flying field.....	1,200.00

Estimates for fiscal year 1921—Item, "Air Service—Lease of land—Rental of buildings"—Continued.

BUILDINGS.

Location.	Project.	Rent.
Charleston, S. C.....	Office D. A. S. O.....	\$509.65
Dayton, Ohio.....	Land for warehouse.....	1.00
Detroit, Mich.....	Saxon motor car plant, ¹ \$90,000, reduced to.....	45,000.00
Houston, Tex.....	Warehouse (No. 1 project), \$45,414, reduced to.....	33,880.00
Los Angeles, Calif.....	A. G. S. D.....	12,000.00
Washington, D. C.....	do.....	5,000.00
Do.....	471-473 Missouri Avenue, carpenter shop.....	3,000.00
Total.....		186,084.44

¹ General Motors Corporation.

The CHAIRMAN. The next item is for a considerable sum for civilian employees. The amount involved is \$9,714,742. What is the nature of the work done by those employees? Are they ground men?

Col. GILLMORE. The civilian employees that are necessary in the Air Service would be divided into two classes. First, you have the maintenance of the office in Washington. We were not considered in the act which was passed taking care of other departments. The Air Service has no permanent basis. These we must include in our estimates for taking care of the Washington office. The Washington office on the face of it looks rather large, but there are several things that will keep it large for about a year more. First, there is the great inventory we are taking of all the property, and the sale and disposal of this great amount of surplus property, which we estimate now will run to about \$46,000,000 more.

The CHAIRMAN. Are you selling that?

Col. GILLMORE. We are selling it. We are doing all the work. The Director of Sales only passes on the amount that we get bids on.

The CHAIRMAN. Right on that point. Could you sell that yourselves without any intervention from the director of sales?

Col. GILLMORE. No, sir; the director of sales acts for the Secretary of War and passes on every article we sell, as to the price. If we want to sell 5,000 gallons of varnish that is surplus, we negotiate and we get the best price we can for that varnish.

The CHAIRMAN. How do you mean you negotiate? Do you find people who are willing to bid on those things?

Col. GILLMORE. Yes, sir; our sales force, our civilian force, and our officers are out trying to find customers to purchase this surplus material.

Mr. FIELDS. It is a commercial proposition?

Col. GILLMORE. It is a commercial proposition; yes.

The CHAIRMAN. Of course you find a purchaser and the purchaser, as I understand you, makes a bid?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. Why could not your officer who finds that purchaser, who gets that bid, sell that stuff as well as a civilian?

Col. GILLMORE. If we had enough officers with salesman experience to handle this kind of sales we probably could do it, Mr. Chairman, but we have not had.

The CHAIRMAN. You have officers enough?

Col. GILLMORE. I do not think anyone would accuse the average flying officer of being a good salesman.

The CHAIRMAN. Granted that, but he is a good enough man to find a customer; he does find a customer.

Col. GILLMORE. There is the point. He can not find a customer.

The CHAIRMAN. But you were just saying that you find the customer and get his bid.

Col. GILLMORE. Yes; but through our civilian organization.

The CHAIRMAN. Are those civilians embraced in the list of civilians you are estimating for?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. How much of that is necessary?

Col. GILLMORE. For the material-disposal civilians the amount is about \$792,000.

The CHAIRMAN. Are you asking for that much in this branch of the Air Service?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. All that the director of sales is asking to dispose of all the surplus is \$400,000?

Mr. GREENE. Perhaps the conclusion in bookkeeping lies in this—that the director of sales puts in only what appears to be his overhead in one place, and then it is scattered out through all these other divisions, and the total is more than that.

Col. GILLMORE. The director of sales does not do any of that work.

The CHAIRMAN. I am just finding out that the director of sales organization seems to be costing the Government millions of dollars, while we are told that for \$400,000 they can do everything. This is an interesting sidelight that we have not been able to develop heretofore.

How many of those civilian employees do you propose to get appropriations for, for finding customers and for arranging the price?

Gen. MENOHER. Eight hundred and sixteen is the number.

Col. GILLMORE. That is the total civilian pay roll of the materials disposal section. That is not all for salesmen. That includes laborers and the expense for warehousing, the expense for accountants, for salesmen, and for everything else connected with that property.

Mr. FIELDS. How many salesmen do you actually have?

Col. GILLMORE. That will probably include about 40 salesmen.

Mr. FIELDS. What character of men do you select for that particular duty?

Col. GILLMORE. We have tried to obtain men with salesmen experience. For instance, on different kinds of commodities we have men who are familiar with those particular commodities. In the matter of steel we try to get steel salesmen, men who can talk with the officials of a steel company intelligently about what sort of steel there is for sale.

Mr. FIELDS. You try to get men familiar with the commercial needs?

Col. GILLMORE. Men who will know whether the material we have will fit into a particular kind of manufacture.

The CHAIRMAN. How much will you pay such an employee?

Col. GILLMORE. The highest paid employee in the salesmen branch gets \$4,800.

Mr. FIELDS. And his expenses?

Col. GILLMORE. He gets a per diem when he is out, but he does not get his expenses in the same way that a commercial salesman gets his expenses. He simply gets a per diem. If he is at a certain place less than a certain number of days he can draw \$4 a day.

The CHAIRMAN. That accounts for \$792,000 of this total amount of \$9,714,742. What is the character of the other civilian employees?

Col. FULLER. Perhaps it would be better, Mr. Chairman, to read down the list. The medical research item was covered in detail last year. There are 20 civilians at the medical research laboratory at Mitchell Field near New York City, conducting research pertaining to the selection and the care of the flying personnel, amounting to \$29,350.

Mr. McKENZIE. I would like to ask you a question in connection with the surplus material. At the hearing last May on the Army appropriation bill, Mr. LaGuardia was questioning Gen. Menoher about that, and the general had made the statement about the sale of some \$18,000,000 worth of lumber, and Mr. LaGuardia asked the question, "Who sold that lumber?" and Gen. Menoher answered, "The Spruce Production Corporation." Then the General went on with this statement:

We have in the East some 5,000,000 or 6,000,000 feet of this same grade of spruce held in various places. Then we have a lot of hardwood, such as walnut, oak, hickory, birch, some ash, but very little, and some cedar and mahogany, which was suitable for the manufacture of propellers, etc. The question came up about the disposal of all this valuable lumber. I gave instructions which were approved by the Assistant Secretary of War that it would not be advisable to dump that valuable lumber on the market at the present time; that it should be stored in such a way that it would not depreciate in value for airplane purposes.

The question I want to ask is whether or not we still have that lumber?

Gen. MENOHER. We have a small part only.

Col. GILLMORE. We are retaining only what we consider enough for our needs for the next three years on lumber. The hard wood lumber is bringing now more than we paid for it. The market is way up on the hardwood lumber. Due to deterioration that we could see coming we have gotten rid of a considerable quantity of hardwood lumber at a better price than the Government paid for it. That contract is peculiar. The lumber on that contract was the only contract, the first contract that the director of sales negotiated. He negotiated it with a big firm, to take over all that lumber, the surplus lumber that the War Department had, and that was known as Contract No. 1, and was made soon after the director of sales started to operate.

The CHAIRMAN. Then there was not much difficulty in disposing of that?

Col. GILLMORE. No; the lumber was an easy item to dispose of.

Mr. McKENZIE. You paid 12 per cent for selling it?

Col. GILLMORE. Twelve per cent is right.

Mr. FIELDS. How does the price received for it compare with the price paid for it?

Col. GILLMORE. On our last sale of hardwood lumber we have been getting a better price than it cost when we purchased it two years ago.

Mr. FIELDS. Dealing with the proposition as a whole, how do you get out with it, as a whole? You might have sold the bulk of it at a less price.

Gen. MENOHER. The price of hardwood lumber has gone up enormously. I was informed by an automobile manufacturer not long ago that ash was \$450 a thousand.

Mr. FIELDS. I am aware of that fact. That is one commodity the department should have gotten out well on.

Col. GILLMORE. The last lumber report we had showed \$4,035,-344.45 reported for disposal. Our cash sales were \$3,176,794.22, and in the settlement of claims where we turned back to the contractor, where we took over a certain amount of lumber in his plant that was really the property of the Government, in the settlement of claims there was \$632,122 involved in that. I have not got the percentage figure on that lumber, that is, the exact recovery. But I know it was very high. I think the average on all lumber was around 90 per cent for the recovery, that is, 90 per cent of what it cost the Government. There has been a very excellent market.

Mr. FIELDS. That is 90 per cent net, or with the commission?

Col. GILLMORE. Ninety per cent net. When we sell we have had to store it and move it, and those charges are deducted.

The CHAIRMAN. Gen. Menoher, you were explaining the item of \$9,714,743 for civilian employees of the Air Service. Will you kindly continue?

Gen. MENOHER. Col. Gillmore will continue.

Col. GILLMORE. The next item is for civilians for the mechanics' training school, 496 civilians, at a total of \$750,000. Col. MacDill has the distribution of those civilians.

Col. MACDILL. The policy of employing civilian personnel in the mechanics' school is based upon the proposition that we were unable to retain a very large number, any considerable number at all, of the trained mechanics after the war, with the result that quite a large proportion—I am not prepared to state whether it is 75 or 85 per cent—but a very large proportion of the personnel that we obtained and have now operating our planes are not trained mechanics. It has been necessary to obtain men who can give these men instruction right in connection with the operation of the planes.

The situation during the past year has not been a satisfactory one at all, but in order to operate we started in on the policy of having civilians at our stations instruct them, while they were doing the work. In addition, we established a mechanics' school as the foundation of a much more wisely laid policy of training enlisted mechanics before they were sent to a station to actually operate the airplanes. We did not have a sufficient number of trained enlisted men to instruct these men at the mechanics' school. We did not have them for two reasons: One reason is that the men who have this knowledge, who are sufficiently trained and are good instructors, can not be induced to enlist. The second is that the pay they would receive on enlistment is not sufficient remuneration.

Mr. MCKENZIE. Let us see. To whom is the instruction given?

Col. MACDILL. The instruction is given to the men who are enlisted and sent to the mechanics' school first before they are sent to an operating station, in order that they may be taught proper mechanical practice before they have a chance to make mistakes in the actual operation of airplanes.

Mr. MCKENZIE. After you have trained one of those enlisted men you give him a noncommissioned grade, do you not?

Col. MACDILL. When this man is taught he will then be sent to an operating station, and we hope we can develop a morale in the years to come which will not necessitate the continued employment of this civilian personnel, but for the coming year this is a proposition that we have to face.

The CHAIRMAN. Will you not have to face that constantly, because when these men are trained will they not be able to earn so much more in civilian life than they can possibly earn in the Army, so that they will seek civilian employment as soon as they are discharged from the Army?

Col. MACDILL. They will. That is perfectly true. But we want to train such men as have three-year enlistments, with the result that for a half year's training we will have two and one-half years' service.

Mr. MCKENZIE. That is what I was thinking about.

Col. MACDILL. That is the situation.

Mr. MCKENZIE. The appropriation under which we are now operating will not expire until July 1 next, and you have been training some of these men during the past months, and surely by the 1st of July you will have some of them that will be capable of taking down an engine, or showing somebody else how to do it, and the point that strikes me is if we are going to keep this endless chain going around here, taking these fellows in and training them and letting them go, as far as your crops is concerned, we might as well abolish the school.

Col. MACDILL. The proposition is hardly that, due to the fact that this present year we have not been able to train as many as I stated because we needed so many men to operate the stations, and also because more of the men were one-year enlistments this year than they will be in the future.

Mr. MCKENZIE. You have not had any trouble keeping your branch of the service filled up with enlisted men, have you?

Col. MACDILL. We enlisted, beginning in the month of May, I think—I am subject to correction—we enlisted very rapidly up to the authorized strength. The enlistments at that time—and I am subject again to correction from the exact details—were mostly one-year men, due to the fact that there was tremendous pressure brought to bear for the discharge of emergency enlistments, with the result that in order to properly take care of the property we had, we had to obtain men very rapidly, with the result that we have had a greater proportion of one-year enlistments this past year than we are going to obtain with our recruiting at the present time.

Mr. MCKENZIE. Do your officers take training in mechanics as well as in flying?

Col. MACDILL. All our officers are given training too.

Mr. MCKENZIE. I was just thinking that at West Point most of our instructors there are military men, and could not that same rule be applied in the Air Service?

Col. MACDILL. The point of that is that if we took officers for this proposition, and similar propositions, we would not have enough to operate. We have a certain number of engineer officers, and a certain number of flying officers on flying duty. In order to properly train and instruct these flying officers in their military and air-service duties, so that they will be ready for service, it is necessary to keep them on their present assignments, which leaves none to spare for instructors in a mechanics school.

The CHAIRMAN. What percentage of the total number of officers in the service can fly?

Col. MACDILL. Of the flying officers—I mean both observers, pilots, and balloon officers—the percentage runs very close to 85 per cent.

Gen. MENOHER. The law specifically provides that of the emergency officers, 1,200, 85 per cent shall be flying officers.

The CHAIRMAN. And the provision, as I recall, in the bill we passed the other day is 90 per cent.

Gen. MENOHER. Ninety per cent flying officers.

Mr. McKENZIE. How many hours a month, under your regulations, do these officers have to fly in order to be able to—

Col. MACDILL. Our regulations are such that an officer must make 10 flights a month, but such are the regulations in regard to tactical training, maneuvers, etc., and the exercises we set for them are such that a large majority, I should say very nearly 90 per cent of the officers, are doing many times that amount in order to do the necessary tactical instruction and to conduct other work that is laid out for them.

Mr. McKENZIE. Of course, under the reorganization bill it is planned that the bulk of the officers shall be flyers in this service. Your corps desires to have them all flyers, as I remember Gen. Mitchell's testimony.

Gen. MITCHELL. That is correct.

Mr. McKENZIE. But put a limitation on the percentage of the officers who might be what we call ground officers, as I understand it, but it does seem to me—I may be entirely wrong in my viewpoint—but it does seem to me that with the number of officers that you will have, and the length of time that is required to be put in in flying, that a great many of the young men who have had a technical knowledge could be very useful as instructors, or supervisors, at these schools.

Col. MACDILL. Such is the case. They would be.

Mr. McKENZIE. I think I would just as soon trust one of you as I would a fellow in a frock coat.

Col. MACDILL. But if the committee desires, it would be possible to show the distribution of the officers as they now exist, and the duties they are upon, and I think there will be no question but what you will see that if you require officers to do this work, it would take that many more officers.

Gen. MITCHELL. May I interject? This mechanical instruction is different from the tactical instruction. There are officers in charge of this work. All of the men are under officers who assign to them exactly the work they have to do. There is one instructor who handles about four or five men. He has got to watch them all the day through. The officers supervise that thing.

Mr. McKENZIE. If you will remember, that was one point that struck me, and it was my idea that the officers who were not flyers

could handle that end of the program, and after they got old enough so that they did not care to be flyers, and your contention was that at your age you were not able yet to say how old a man would have to be before he would cease to be a valuable flyer.

Gen. MITCHELL. We think that no officer can be in the Air Service and properly perform his duties unless he has been a pilot, and had that instruction all the way through. He has not the knowledge of the air and the tactical use of the air force which he gets by having been a pilot. We are very decided on that thing. Whether he is actually flying at the time, or is occupied on certain work, is another thing. The man who has had pilot instruction, who has served in units, can go and specialize in any kind of engineering, in the air or anything else, but with that basic knowledge of flying he would not be qualified for the Air Service.

Mr. McKENZIE. I am not going to quarrel with you about that, General, but I understand it is the desire that an officer who also may have a knowledge of the mechanical end of the thing as well as of flying.

Gen. MITCHELL. We give them that instruction as an incident of their flying instruction. The point is that these men are asked for in the lower grades of mechanical work, and if you supply the officers for that thing you would be paying four or five times as much for that instruction as you would be paying if you got civilians.

The CHAIRMAN. This is one instance where the civilian gets less money than the officer?

Gen. MITCHELL. Yes; it does in that particular case, and it is really a question of vocational training for the man that comes in. We have no trouble, as Gen. Menoher said, in getting men, and the men that we do get come in largely for the training, because they know that when they go out of the Army they can earn twice as much, and it is a good thing for the whole country, as far as that is concerned.

Mr. McKENZIE. Can you not see the point, that this committee is trying to meet the situation which confronts us? We are trying to make appropriations to build up an efficient Military Establishment for a military purpose, but it seems like at every little cross road, every avenue they can possibly reach in, they are trying to work in vocational training, mechanical training, and farming, and all that sort of thing, and the engineers want to do that, and the Air Service men want to do that, and they want to have vocational training in the Infantry, where they train a few hours in the morning and go to school in the afternoon, and a man told me the other day that of a certain class that they asked what training they wanted to take, I think about 90 per cent of them said they wanted to take lessons in music. I am not telling this as a joke, but an officer told me that as a fact. What we want to do is to give you a good military organization and let us have a good serviceable Military Establishment, and I think the time has come when we have got to cut out this thing of trying to have the Military Establishment the instructor for everybody in the United States.

Gen. MITCHELL. Mr. McKenzie, we are ordered to carry out vocational training.

The CHAIRMAN. Of course, I would be opposed to training them as musicians, but I will say frankly that I have no objection to the

vocational training, if it is carried on in the afternoon, when the men in the Infantry and the Cavalry and the Artillery have always had the afternoons to themselves.

Mr. McKENZIE. But, Mr. Chairman, I do not understand it to be your position, or that it has ever been your position, to make vocational training the primary purpose and the military service secondary.

The CHAIRMAN. Of course, I know that they are having a great deal of trouble to get men to enlist, and better results can be obtained by showing the men that they can improve their earning capacity by enlisting in the Army and taking the military training in the forenoon, as they have always done, and that in the afternoon they can devote a few hours to the training in some skilled trade or some profession, and so better their earning capacity. I think it is a good thing to utilize that program in order to get men into the Army.

Gen. MITCHELL. All our training, with the exception of a very small percentage, is in a useful trade in the Air Service, and the most important one of those things, so far as the enlisted man is concerned, is the instruction on motors. If we do not keep our motors in shape we can not fly, and you are going to kill all your flying personnel. That is the point that Col. MacDill had in the back of his head, that we have got to give those people the very best instruction we can on motors.

Gen. MENOHER. What I would like to say is that I think it is a pretty well established fact that only a mechanic can teach another mechanic to do a piece of mechanical work. I am a mechanic myself, and I know what I am talking about in that respect. The officers as a rule, are not fitted for doing mechanical work, and it is only one who is trained in that who can pass his knowledge on to another man, so we can not employ our officers, whether flying officers or whether ground officers, or whether superannuated officers, as instructors of mechanics in the primary work of the trade, and, as far as the Air Service is concerned, we are more concerned with getting a force of enlisted men who can carry on this work at our fields and with our units than they are in the vocational end of it.

We would like to have every enlisted man we have a mechanic if we can, because really he would be worth a great deal more than a man who is not a mechanic, and we are primarily interested in having as large a number of our enlisted men trained as mechanics as possible.

The CHAIRMAN. How many more civilian employees do you propose to provide for out of this lump sum of \$9,714,743?

Col. FULLER. Six thousand eight hundred and thirty in the item of \$9,621,000, and in addition to that is the item of 816 civilian employees for the matériel disposal.

The CHAIRMAN. You told us about that; so that you are calculating to have a little over 7,000 civilian employees?

Col. FULLER. Yes, sir.

The CHAIRMAN. Will you kindly segregate in your statement the number for each branch of work in the service?

Col. FULLER. Yes, sir; I will read that.

The CHAIRMAN. You can give it to the reporter, or you can put it in the hearings.

Col. FULLER. Yes, sir; I will do that.

(The statement referred to is as follows:)

Air Service, pay and expenses, civilian employees.

[Fiscal year 1921, 10,000 personnel, \$60,000,000.]

ARMY.

	In Washington.		Outside Washing- ton.	
	Person- nel.	Amount.	Person- nel.	Amount.
Medical research.....			20	\$29,350
Mechanics' Training School.....			496	750,500
Advisory board.....	8	\$11,120		
Training and operations.....	99	136,040	1,079	1,427,865
Administrative group.....	286	327,390	62	76,732
Information group.....	77	96,170		
Finance.....	9	10,500		
Plant protection.....			259	415,200
Office, chief supply.....	10	12,220		
Procurement.....	146	221,200	75	138,495
Engine and plane maintenance.....			240	449,800
Engineering.....			1,037	1,734,917
Property.....	1 287	376,520	2,553	3,260,074
	1 922	1,191,180	5,821	8,272,933

	Person- nel.	Amount.
In Washington.....	922	\$1,191,180
Outside Washington.....	5,821	8,272,933
Total.....	6,743	9,464,093
Traveling expenses.....	6,743	187,650
Total.....		9,621,743

¹ Includes civilians at Bolling Field in the District of Columbia.

NOTE.—Material Disposal and Salvage Division: In Washington, 44 personnel, \$58,140; outside, 772 personnel, \$733,860.

See attached detailed list of individual employees showing salaries and wages, which include the following:

Salaries and wages, 816 civilian employees.....	\$780,000
Traveling expenses.....	12,000
Total.....	792,000

The CHAIRMAN. The next item is \$1,000,000 for the storage and disposal of the immense stocks of matériel and partially complete equipment.

Col. GILLMORE. That is the item we had up before, Mr. Chairman.

The CHAIRMAN. What is the total value of that one?

Col. GILLMORE. About \$45,000,000.

Gen. LORD. Mr. Chairman, may I here make a suggestion for the consideration of the committee?

The CHAIRMAN. Yes.

Gen. LORD. Col. Gillmore informs me that the total estimated cost of handling this surplus stock for sale during 1921, will be approximately \$1,000,000. The Ordnance Department, under the current appropriation, submitted an estimate to this committee for a certain amount of money necessary to carry on this sales work of material. They did not get all of the amount that was estimated, so that in the month of January it seems as though, because of the lack of money

with which to pay the personnel, that it would be necessary for them to start their sales operations—

The CHAIRMAN. I think they asked for \$20,000,000.

Gen. LORD. Approximately \$10,000,000 for this purpose, if I recall it. The matter was urgent. I discussed it with the Director of Sales, and submitted the cost to the Chairman of the House Committee on Appropriations in connection with the last deficiency bill that was passed. The total receipts from Ordnance sales up to date, the total sales, are \$137,106,389.56. I recommended to the House Appropriations Committee that the Ordnance Department in that bill be given authority to expend not to exceed \$3,000,000 of the receipts from these sales for the purpose of continuing that work through this current fiscal year, and it was given in that deficiency bill. The Committee might have that thought in mind, that in this appropriation authority for the expenditure of not to exceed \$1,000,000 from the receipts of sales for the purpose of carrying on this work would allow you to reduce the amount you think this activity should have to that extent.

The CHAIRMAN. We will take that into consideration.

Gen. LORD. I thought I would get that in the record for the consideration of the committee.

The CHAIRMAN. We will take that into consideration when we finally agree on the figures.

The next item is for experimental and research work.

Col. FULLER. The development of helium.

The CHAIRMAN. Oh, yes; the helium development. I see the estimate proposed is \$765,860. Does the Navy contribute a like amount?

Gen. MENOHER. That is the amount of the Navy's share. We are working on a 50-50 basis with the Navy in the expense of this thing.

The CHAIRMAN. The Bureau of Mines is cooperating with you both?

Gen. MENOHER. Yes, sir.

The CHAIRMAN. Do they get any appropriation at all for this research work?

Gen. MENOHER. I can not tell you. Do you know, Col. Chandler?

Col. CHANDLER. The Bureau of Mines money for experimentation is supplied half from Army funds and half from Navy funds.

The CHAIRMAN. And they lend their experts?

Col. CHANDLER. Their personnel; yes, sir.

The CHAIRMAN. What progress are you making on the development of helium?

Col. CHANDLER. The plant which was authorized about a year ago is about completed, and the machinery is to be installed in the next two or three months. We expect the plant to be producing helium on the 1st of July at the rate of about 40,000 cubic feet a day.

Mr. McKENZIE. How much did that plant cost, \$3,000,000?

Col. CHANDLER. No, sir; we have spent on helium so far a little over \$6,000,000. A good part of that was spent for three experimental plants, gas privileges, the construction of the large production helium plant, and pipe line.

Mr. McKENZIE. How many wells produce gas from which you can extract helium?

Col. CHANDLER. You will find in practically every natural-gas well in the United States a certain percentage of helium, in Ohio, about one-half of 1 per cent of helium, and in Louisiana about the same.

Mr. McKENZIE. What per cent at the wells that you are experimenting with?

Col. CHANDLER. It is about eight-tenths of 1 per cent.

Mr. McKENZIE. A little less than you find in the others?

Col. CHANDLER. It is on account of the large quantity of gas that the Petrolia field could produce—about 20,000,000 cubic feet a day. It is a very extensive field at Petrolia, Tex.

Mr. McKENZIE. How do you get it? Do you hook onto their pipe lines and then have a way of separating the gas?

Col. CHANDLER. Yes, sir; we reprocess practically all of the gas, and with compression and low temperature separate the helium.

The CHAIRMAN. The gas passes through certain machinery which separates the helium from the other gas?

Col. CHANDLER. Yes, sir; all this gas is compressed by large compressors, and cooled to about 200 degrees centigrade below zero. Then the other gases are liquified and may be drawn off as a liquid leaving the helium about the last element. Helium can be liquified by further reduction in temperature and greater pressure.

The CHAIRMAN. Do your experiments show that it is noncombustible?

Col. CHANDLER. Yes, sir.

Gen. MENOHER. It is absolutely noncombustible.

Col. CHANDLER. Many universities and scientists have tried and found that helium will not combine with any other element in any way.

The CHAIRMAN. What other countries are following these experiments?

Col. CHANDLER. We know that Great Britain is doing so. They have made inquiries concerning our process. Italy is interested also, but we do not know that they have been using it, because the quantity of helium there is reported as small.

Gen. MENOHER. There is some helium in Canda, but not in paying quantities, and there is helium being obtained now in Tuscany.

Mr. GREENE. Helium is an element, and there is no hope of producing it from some other element?

Gen. MENOHER. Yes; it was first discovered in the atmosphere of the sun, and that is why it is called helium, from helios, the sun.

Mr. GREENE. You have not been experimenting with it long enough to know how long a given supply sufficient to supply one balloon is likely to hold the gas?

Col. CHANDLER. We have machinery now in process of construction which will repurify the gas, so we do not expect to lose much of it. When a little air gets mixed with helium, compression and refrigeration will liquify the air which can then be drawn off.

Mr. GREENE. There is a little bit of leakage?

Col. CHANDLER. Yes, sir; through the fabric.

Mr. McKENZIE. What is the prospect for obtaining it in large quantities?

Col. CHANDLER. This plant now nearing completion will produce 40,000 cubic feet a day. That can be stored and used as desired in airships and balloons.

The CHAIRMAN. How much storage space will you require or will you be able to liquify it and keep it in cold storage?

Col. CHANDLER. Yes; it can be liquified. We have a very large number of cylinders now available for storage purposes. The familiar gas holders may be used. Some of these in various cities will hold 7,000,000 cubic feet.

Mr. McKENZIE. The fact of the matter is that up to the present time it is only in an experimental stage; is not that true? You have not got far enough along so that you can say that it is a commercial product or anything of that sort?

Col. CHANDLER. I believe it has passed beyond the experimental stage. There were enough cylinders of helium en route to Europe when the armistice was signed to fill about five balloons.

Mr. GREENE. What is the degree of condensation possible with the thing so as to prepare it in bulk to fill your balloons with? That is, what can you reduce it to for shipment?

Col. CHANDLER. One cylinder about 4½ feet in length and 9 inches in diameter will hold 200 cubic feet.

The CHAIRMAN. Experimental and research work, \$8,286,175. Will you kindly explain that item?

Col. BANE. That work is to carry on experimental work that was done last year at the experimental station at McCook Field. They expended, or will expend during this year about \$2,000,000, not including civilian personnel. I have made up a summary of that development during the last year that I would like to have entered in the record, if you have no objection, just for the information of Congress. It would probably be most enlightening to read. If you care to have me do so, I could read it to you. It just goes through the experimental types of airplanes that we have developed and the experimental engines we have out there, and the other experimentation on the supercharge which allows us to go to high altitudes.

The CHAIRMAN. Your experimental work has been largely in the development of types.

Col. BANE. Types of airplanes, airplane engines, instrument equipment, ordnance, and armament.

The CHAIRMAN. If you will kindly put it in the hearings the committee can take it up.

(The summary referred to is as follows:)

SUMMARY OF DEVELOPMENT MADE BY THE ENGINEERING DIVISION, AIR SERVICE,
FOR THE FISCAL YEAR 1920.

The following summary has been prepared to show the committee what has been done with the money allowed the Air Service for engineering purposes for the fiscal year 1920. Four million dollars only was made available for this work. It is felt that the country has received a good return in experimental development and advancement in aviation from this investment.

AIRPLANES.

We stated that we wished to develop 15 types to meet all military requirements. The following indicates the availability of airplanes to meet these requirements at the present time:

- Type I. *Single-seater pursuit (water-cooled engine).*
 - (a) Ordnance Engineering Corporation model D.
 - (b) Thomas Morse MB-3.
 - (c) Engineering Division model VCP-1.

All three of these are designed about the 300 Hispano. As the Ordnance Engineering model D most nearly conformed to our requirements, the Engineering Division concentrated on it and greatly improved its performance and ease of maintenance. Many major changes were made in this airplane. It is recommended for production.

Bids were opened on February 20 for a new and improved design. The Ordnance Engineering Corporation submitted a much improved design based on their experience with the model D. A contract is now being drawn for the construction of three of these new types. This will be done out of 1920 funds.

Type II. *Single-seater pursuit for night attack (air-cooled engine).*—A contract has been let to the Curtiss Engineering Corporation for the construction of three experimental models of this type about the Liberty 6 engine.

Type III. *Single-seater pursuit (air-cooled engine).*—The construction of this type is held up pending the design of a satisfactory air-cooled engine. Proposals are now out for a 350–400 horsepower radial air-cooled engine. An unsuccessful effort has been made to procure the Cosmos engines from England. We are now negotiating with an American designer who claims to have the American rights to manufacture the Cosmos "Jupiter" engine. An airplane of this type will be constructed during the next fiscal year if funds are made available.

Type IV. *Single-seater pursuit, armored, for ground attack (air or water cooled engine).*—An airplane of this type requires a 300-horsepower geared 37-millimeter cannon engine. The engine has been designed and constructed and is now being tested at McCook Field. It is a geared cannon 300-horsepower Hispano-Suiza, and was built by the Wright-Martin Co.

An armored airplane for this engine is completely designed, and actual construction will start about May 1.

Type V. *Two-seater pursuit (air or water cooled engine).*—The Loening monoplanes, LePere and XB1A are available, but are not perfectly satisfactory. Further work on these as two-seater pursuit types was discontinued early in the year due to lack of funds. As soon as a 350–400 horsepower radial engine becomes available, an effort will be made to meet the requirements for this type.

Type VI. *Three-seater armored airplane for ground attack.*—A completely armored airplane has been developed and built at McCook Field; is now being assembled and will be in the air the first week in April. This airplane marks a distinct advance in aviation and is believed to be absolutely up to date and as good as any existing machine of this type.

Type VII. *Two-seater Infantry liaison.*—A contract has been let and the Ordnance Engineering Corporation is now constructing two airplanes of this type. They furnish complete armored protection for engine, gasoline, and crew. This airplane will be in the air before July 1.

Type VIII. *Two-seater night observation.*—The XB1A designed and built at McCook Field about the 300 Hispano-Suiza engine is recommended for production. Complete production drawings are available. Two airplanes are now being built to check these drawings.

Type IX. *Three-seater Army and Coast Artillery observation and surveillance.*—Three designs for this type have been considered. A contract will be let for actual construction by April 15.

Type X. *Two-seater corps observation.*—The XB1A with the 300 Hispano is recommended for production. Three all-steel airplanes around the Liberty 12 engine are being constructed by the Art Metal Corporation for this division. The first airplane will receive its flying tests early in May.

Type XI. *Two or multi-seater day bombardment.*—The USD9A, which fills as closely as possible the requirements of this type, is available and is recommended for production. Complete production drawings are on hand. It is not possible to design a better airplane for this purpose about the Liberty engine. Proposals are now being prepared for the construction of an airplane of this type about the new Packard 500-horsepower engine. With this added horsepower the specifications for this type can be more nearly met.

Type XII. *Multiseater night bombardment short distance.*—The Glenn L. Martin bomber is available with complete production drawings. Although this airplane does not give the performance desired for this type, it is believed to be the best short-distance night bombardment airplane in existence, and it is therefore recommended for production.

The airplane is being redesigned to improve its performance, and a contract will be let within thirty days for two or three airplanes of new design.

Type XIII. *Multiseater night bombardment, long distance.*—Funds were not available to construct an airplane of this type during the current fiscal year, but six designs have been prepared and construction will be started early in the fiscal year 1921 if funds

are made available. Airplanes of this type have a cruising radius of 20 hours and can carry 5,000 pounds of bombs.

Type XIV. *Two-seater training (air-cooled engine).*—The construction of this type has been held up pending the completion of the design of a 140-horsepower radial air-cooled engine. A contract has been let for the construction of four of these engines. Proposals are now being prepared for bids for the construction of three experimental airplanes about this 140-horsepower radial air-cooled engine. Contract should be let for this work early in June.

Type XV. *Two-seater training (water-cooled engine).*—The VE-7 about the 150 Hispano is available with complete production drawings. A design is well under way for an airplane of this type about the Liberty 6 engine.

It will be observed that the Engineering Division either has available, ordered on contract, or is now negotiating contracts to cover each type required, except types III, V, or XIII. Due to lack of suitable engines and sufficient funds these types could not be covered. It was manifestly impossible to complete a program requiring \$10,000,000 with an appropriation of \$4,000,000.

ENGINES.

1. *Universal test engine.*—A laboratory single cylinder engine has been designed and built which makes it possible to test any reasonable size cylinder. This cuts materially the cost of experimental work as one cylinder only of a new design can be ordered and tested in place of an entire engine. Several commercial laboratories have been furnished drawings of this engine. This marks a real advance in laboratory equipment.

2. *Water-cooled engine.*—A 300-horsepower geared Hispano Suisa cannon engine has been designed and is being tested. A 37-millimeter cannon can be fired through the propeller hub of this engine.

A contract has been let for the construction of:

8-cylinder 160-horsepower V type engine.

12-cylinder 300-horsepower V type engine.

12-cylinder 500-horsepower V type engine.

The 8-cylinder 160-horsepower and the 12-cylinder 300-horsepower have been delivered and tested. This series of engines have been designed with special attention to maintenance and endurance.

A 700-horsepower W type engine has been designed. Bids have been received and contract will be let shortly for construction of this engine.

3. *Air-cooled engine.*—A Lawrence 3-cylinder radial air-cooled engine has been purchased and tested. The tests showed this engine to be the best radial air-cooled engine about which we have data.

A 9-cylinder 140-horsepower radial engine has been designed and contract is being drawn for its construction.

The A. B. C. Wasp 170-horsepower and Dragonfly 320-horsepower engines have been received from England and tested.

A 400-horsepower radial air-cooled engine is now under order.

Proposals are now out for the construction of 350-400 horsepower experimental radial air-cooled engines for pursuit airplanes.

An unsuccessful effort has been made to purchase the Cosmos Jupiter and Mercury engines. We are now negotiating with a contractor in this country who claims to have the rights to construct these engines in the United States.

The Curtiss K-12, Bugatti and Dusenbergl, Hall Scott L6, Napier Lion have been received and tested.

Epicyclic geared Liberty 12 engines have been built, tested and delivered to the Navy.

Standard engine tests have been made of the following foreign engines:

Mercedes 200 and 260 horsepower.

B H P.

Mayback.

Benz 200 horsepower.

Isotta.

B R-2.

4. *Supercharges.*—Supercharges have been perfected and the world's altitude record has been made for both one and two persons. An altitude of 36,120 feet has been reached with a supercharged Liberty engine in a Le Pere biplane. Maj. Schroeder was the pilot on this test and very valuable scientific data was obtained. For example, it was determined that the trade winds in this altitude blow from west to east with a velocity of 175 miles per hour. These winds exist above 20,000 feet,

their velocity increasing with the altitude. The use of the supercharger increased speed of the LePere airplane in the neighborhood of 50 miles per hour at 30,000 feet.

Marcarta Bakelite propellers have been designed, tested, and recommended for production.

EQUIPMENT.

A parachute has been developed which is considered the best available, either foreign or domestic. This parachute can be dropped from an airplane traveling at 150 miles per hour and with a weight of 400 pounds attached, thus proving its strength and safety. These parachutes are now in production.

A leak-proof tank has been developed that has withstood 47 shots from a .30 caliber machine gun alternately armor piercing, incendiary and service bullets.

Air-bag floats for emergency landing on water have been designed, tested, and recommended for production.

The aerial torpedo was tested in Florida; a flight of 16 miles was obtained. Improvements in design have been made and a contract for new gyroscopic apparatus has been let. A contract is now being negotiated for installing the automatic controls in a man-operated airplane.

A barograph has been developed at McCook Field by Dr. George de Bothezat in which a millimeter shows a height of 20 feet. This is a great improvement in barographs.

ARMAMENT.

In cooperation with the Ordnance Department a 50-caliber Browning machine gun has been improved in design. Model guns are now being built.

New flexible mount has been developed, and also a wind compensator to facilitate handling flexible guns.

A flexible bottom mount has been designed, constructed, and tested.

Research work has been done on an electrical synchronizer.

A 37-millimeter flexible cannon has been mounted and tested in a Martin bomber. Funnel and ring mounts for 37-millimeter cannon are in the course of construction.

SHOPWORK.

The following airplanes have been built or are being built at McCook Field:

- 2 VCP-1 with 300 Hispano, completed.
- 1 XB1A with 300 Hispano, completed.
- 2 XB1A with 300 Hispano, in process.
- 2 VE-7 with 150 Hispano, completed.
- 2 type VI armored ground attack, almost completed.
- 1 DH9A, completed.

Major modifications have been made on airplanes as follows:

- 4 DH-4's into photographic type.
- 1 LePere biplane from pursuit into observation type.
- 2 DH-4's modified to take 300 Hispano.
- 1 DH-4 converted into DH-4B.
- 1 DH-4 modified to take leak-proof tanks.
- 2 DH-4's modified to take 8 machine guns.
- 2 DH-4 landing gears moved forward 6 inches.
- 1 Curtiss JN4D provided with shock absorbing rudder and landing gear (JV Martin design).
- 1 Martin bomber completely overhauled and large tanks installed.
- 1 Fokker modified to take Liberty 6 engine.
- 50 airplanes assembled and flown.
- 1 DH-9A rebuilt after wreck.
- 3 DH-4's rebuilt after wreck.
- 1 DH-9, 9 hours' capacity, rebuilt after wreck.
- 1 DH-4 modified and provided with fins and float.

The following additional large items have been built in our shops:

- 2 field portable starter.
- 2 flexible laboratory single cylinder test engines.
- 15 variable and reversible pitch propellers for Liberty 12, 300 and 150 Hispano engines.
- 100 Mark XVI bomb traps.
- 200 radio generator brackets.
- 200 Liberty gasoline strainers.

- 190 gasoline relief valve assemblies.
- 2 hand starters for Liberty 12.
- 25 sets Nelson gun controls for Liberty 12.
- 1 Mock-up of USXT-1 training airplane.
- 1 Mock-up armored attack airplane.

The following airplanes were sand tested:

- 1. LePere triplane, 2 Liberty 12.
- 2. Pomilio bomber.
- 3. Pomilio pursuit.
- 4. Thomas Morse pursuit.
- 5. Ordnance pursuit..
- 6. Vought pursuit VE-8.
- 7. VCP-1 (Verville pursuit).
- 8. Fokker.
- 9. Le Pere biplane.
- 10. DH-4.

The following airplanes were given complete performance tests:

- 1. USD-9A.
- 2. USD-9AB.
- 3. VE-7 with 180 Hispano.
- 4. Pomilio bomber with and without bombs.
- 5. Martin bomber with and without bombs.
- 6. Le Pere triplane.
- 7. Thomas Morse MB-3.
- 8. Ordnance Engineering model D.
- 9. VCP-1.
- 10. USXB-1-A.

FLIGHT RECORDS.

September 6, 1919, Maj. R. W. Schroeder reached an altitude of 28,500 feet with an observer.

October 4, 1919, Maj. Schroeder reached an altitude of 31,000 feet. On this flight an observer was carried, parachutes for both men, 3 hours' fuel and about 35 pounds of miscellaneous equipment. This was a world's record for any machine with any load.

February 27, 1920, Maj. Schroeder reached an altitude of 36,120 feet, breaking his own record. No observer was carried on this flight.

September 10, 1919, shots were fired from a 37-millimeter cannon in the air. This is believed to be the first flight ever made with a cannon in the United States.

October 4, 1919, a JN4-H was flown with a Hart reversible pitch propeller.

Maj. R. W. Schroeder won the reliability contest in New York to Toronto race. He flew a VE-7 airplane.

Master electrician Clarence B. Combs made the fastest one-way trip in the New York to Toronto race.

Master electrician Clarence B. Combs made a flight from Erie, Pa., to New York City, leaving Erie at 2.45 a. m. and arriving in New York at 4.45 a. m.

Col. BANE. This appropriation is asked for to continue this work. We have a wonderful equipment at Dayton, Ohio, in the way of laboratory equipment and its machinery that we would like to continue and maintain with the idea of developing this industry, which you might say is in its infancy. We will insert in the record a statement of the proposed work for the ensuing year.

Air Service, Army.

EXPERIMENTAL AND RESEARCH.

RECAPITULATION.

Lighter than air.....	\$330,000
Engineering.....	7,931,175
Medical.....	25,000
Total.....	8,286,175

Engineering Division:	
Airplane section	\$3,580,000
Power-plant section	2,150,000
Equipment section	1,493,000
Armament section	354,000
Materials section	354,175
Grand total	7,931,175

AIRPLANE EXPERIMENTAL DEVELOPMENT.

Single-seater, pursuit (water-cooled engine):	
1 type, 3 samples each, 3×\$20,000 (standard practice in design, material, and construction)	60,000
1 type, 3 samples each, 3×\$25,000 (design, material, and construction for all metal)	75,000
Single-seater pursuit (air-cooled engine):	
1 type, 3 samples each, 3×\$20,000 (standard practice in design, material, and construction)	60,000
Single-seater pursuit (night work) (water-cooled engine):	
1 type, 3 samples each, 3×\$20,000 (standard practice in design, material, and construction)	60,000
1 type, 3 samples each, 3×\$25,000 (design, material, and construction for all metal)	75,000
Single-seater pursuit (night work) (air-cooled engine):	
1 type, 3 samples each, 3×\$20,000 (standard practice in design, material, and construction)	60,000
Three-seater ground attack, armored (air or water cooled engine):	
1 type, 3 samples each, 3×\$60,000 (standard practice in design, material, and construction)	180,000
1 type, 3 samples each, 3×\$70,000 (design, material, and construction for all metal)	210,000
Two-seater infantry liaison, armored (air or water cooled engine): 1 type, 3 samples each, 3×\$40,000	120,000
Two-seater night reconnaissance (air or water cooled engine):	
1 type, 3 samples each, 3×\$25,000 (standard practice in design, material, and construction)	75,000
1 type, 3 samples each, 3×\$30,000	90,000
Three-seater Army—(Coast Artillery—surveillance (air or water-cooled engine):	
1 type, 3 samples each 3×\$50,000 (standard practice in design, material, and construction)	150,000
1 type, 3 samples each 3×\$60,000 (design, material, and construction for all metal)	180,000
Two-seater corps observation (air or water-cooled engine):	
1 type, 3 samples each 3×\$25,000 (standard practice in design, material, and construction)	75,000
1 type, 3 samples each 3×\$30,000 (design, material, and construction for all metal)	90,000
Day bombardment (air or water-cooled engine):	
1 type, 3 samples each 3×\$30,000 (standard practice in design, material, and construction)	90,000
1 type, 3 samples each 3×\$35,000 (design, material, and construction for all metal)	105,000
Night bombardment—short distance (air or water-cooled engine):	
1 type, 3 samples each 3×\$50,000 (standard practice in design, material, and construction)	150,000
1 type, 3 samples each 3×\$60,000 (design, material, and construction for all metal)	180,000
Night bombardment—long distance (air or water-cooled engine):	
1 type, 2 samples each 2×\$150,000 (standard practice in design, material, and construction)	300,000
1 type, 2 samples each 2×\$200,000 (design, material, and construction for all metal)	400,000

Two or three seater for Coast Artillery work (air or water seaplane-cooled engine):	
1 type, 3 samples each 3×\$50,000 (standard practice in design, material, and construction).....	\$150,000
Training (air-cooled engine):	
1 type, 3 samples each 3×\$25,000 (design, material, and construction for all metal).....	75,000
Training (water-cooled engine):	
1 type, 3 samples each 3×\$25,000 (design, material, and construction for all metal).....	75,000
Development and improvement of existing types, including aerodynamical research development.....	300,000
Propeller research and development.....	195,000
Total.....	3,580,000

POWER PLANT.

Improvement of existing engines.....	250,000
Development of transmissions.....	175,000
Development of altitude superchargers.....	200,000
Development of cooling systems.....	50,000
Development of fuel systems.....	30,000
Development of automatic control of temperature and carburetor.....	50,000
Improvement of installations.....	50,000
Engine tests.....	100,000
Engine research.....	30,000
Development of special fuels.....	15,000
Development of air-cooled radial engine, 400 to 500 horsepower.....	300,000
Development of air-cooled engine, 600 to 800 horsepower.....	300,000
Development of water-cooled engine, 700 horsepower.....	300,000
Development of water-cooled engine, 1,000 horsepower.....	300,000
Total.....	2,150,000

EQUIPMENT.

Parachutes.....	200,000
Fire and leakproof tanks.....	100,000
Development of aerial cameras.....	200,000
Special aviation field transportation.....	200,000
Landing mats for muddy and swampy country.....	50,000
Instruments, airplane and engine.....	100,000
Portable field shelter.....	100,000
Radio direction finding.....	50,000
Aerial torpedo.....	225,000
Radio telephone.....	68,000
Radio control.....	100,000
Development oxygen apparatus.....	50,000
Searchlights, landing lights, running lights, and signal lights.....	25,000
Electrically heated clothing, etc.....	25,000
Total.....	1,493,000

ARMAMENT.

Aerial testing of demolition and fragmentation bombs, airplane flares, etc.	14,000
Development of bomb carrying and releasing devices.....	40,000
Development of control and directing methods for use in bombing.....	15,000
Aerial testing and developing of incendiary, tracer, armor-piercing, explosive ammunition for machine guns and cannons.....	20,000
Design, development, and improvement of synchronizing devices for machine guns.....	35,000
Development of machine-gun and cannon mounts for airplanes.....	50,000
Testing and developing of machine guns for aerial use.....	20,000
Testing and developing of bomb sights.....	40,000
Development of sights for fixed and flexible machine guns and cannons..	50,000

Development and improvement of armament installations on existing types of planes and upon types to be developed.....	\$50,000
Aerial testing and developing of 20 mm., 37 mm., and larger caliber cannons.....	20,000
Total.....	354,000

MATERIALS.

1. Investigations—wood laboratory.....	82,072
(a) Routine tests of struts, wing beams, ribs, etc., for other sections.....	19,102
(b) Carry on a series of experiments on spruce and Douglas fir to see if vibration and the sound waves given off when a piece of wood vibrates has any relation to the strength properties of timber, with special reference as to whether or not brashness can be detected in this manner.....	2,490
(c) Struts.....	2,410
(d) Forest products laboratory.....	58,070
2. Fabric laboratory investigations.....	18,021
(a) Routine tests of fabrics for other sections.....	9,100
(b) Development of metallic woven wing covering.....	1,525
(c) Fireproofing airplane and parachute fabric.....	1,525
(d) Consideration of spun-silk fabrics, especially with regard to their suitability as a transparent wing covering for increasing visibility.....	3,111
(e) Critical tensions of fabric before doping and attempt to determine these points for standard fabrics; effect of doping if critical tension is not exceeded. Effect of doping if critical tension is exceeded.....	1,180
(f) Development of special 2-ounce cotton parachute fabric.....	1,580
3. Investigations, physical testing laboratory.....	94,000
(a) Investigation of specifications for ferrous and non-ferrous metals.....	33,000
(b) Routine tests for other stations.....	23,000
(c) Vibration and fatigue.....	26,750
(d) Development of tires, tubes, and landing gears; also shock absorbers.....	11,250
4. Investigations—metallurgical laboratory.....	66,500
(a) Aluminum, magnesium, etc., chiefly with regard to their use in the plane and not covering work on specifications.....	5,000
(b) Substitution of metal for wood in airplane construction.....	12,950
(c) Investigations of ferrous metals with reference to specifications, present and future, including proper heat treatment, effect of working, forging, rolling, drawing, swaging, etc., on metals.....	10,900
(d) Drawing of streamline tubing.....	2,230
(e) Streamline wire.....	2,230
(f) Armor plating for airplanes.....	16,500
(g) A study of relative merits of riveting, brazing, acetylene welding, and elastic welding for use in connecting metals for use in aircraft construction.....	7,250
(h) Routine tests for other sections.....	9,440
5. Investigations—chemical laboratory.....	71,527
(a) Metal analyses—routine and special methods of analyses.....	28,600
(b) Investigation of all problems in connection with dopes, cellulose acetate, cellulose nitrate, dope plasticizers and rational dope formulæ, mechanical device for spreading dope, pigmentation of dopes, special dopes for recovery systems, acetate dope proof paint.....	10,827
(c) Routine tests of fuels and lubricants.....	7,500
(d) Metallic protective coatings for metal parts.....	9,700

5. Investigations—chemical laboratory—Continued.	
(e) Varnish tests, wood stains and veneer coatings, etc....	\$8,700
(f) Glue	6,200
6. Investigations, camouflage branch, establishment of specifications for various sections of the world	\$6,600
7. Gauge-testing branch, installation and routine testing	10,080
8. Investigations of fittings	5,375
Total	354,175

BALLOON (LIGHTER THAN AIR).

Development of:	
Fabrics, dopes, etc., to improve balloon material	25,000
Helium gas repurifier, etc.	40,000
Improvement or development of:	
Parachute and harness	1,000
Fireproofing solutions for fabric	1,000
Improvements of gas-generating units and inflation equipment	75,000
Improvement of balloon cable, with telephone center	15,000
Winches	30,000
Conversion of type "R" balloons into dilatable type	30,000
Airship engines	30,000
Improvement of instruments of navigation, observation, airship control	3,000
Preparation and laying of goldbeater skins	5,000
Special bodies for motor equipment	15,000
Equipment for laboratory and engineering offices, including scientific books	10,000
Employment of engineer staff for design of airships, experiments and testing	50,000
Total	330,000

MEDICAL.

For the purchase of special apparatus and appliances and the maintenance, including the care and replacement, of the apparatus now installed at the laboratory at Mineola	25,000
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The CHAIRMAN. You said you had about \$4,000,000 for this work in the present appropriation bill?

Col. BANE. That is correct, including civilian personnel and all overhead. The amount corresponding to that now asked for under this item is approximately \$2,000,000.

The CHAIRMAN. What is the necessity for doubling that amount in this coming bill?

Col. BANE. We want to go ahead a little faster. We feel now that perhaps we are behind Germany, for example, in our experimental work, for the reason that we did not put enough money into it. We asked, if you will remember, for \$10,000,000 last year for this purpose.

Mr. McKENZIE. Are you the officer that spent some time in Germany?

Col. BANE. No, sir; I am not.

Mr. McKENZIE. I think it would be perhaps enlightening to the committee to have a very brief statement from that officer, because I understand—I do not say he said it—but it was reported to me that he had used language to the effect that our aircraft machines at the present time were just about as obsolete as battleships, and that to go on building the kind of machines we are building now, we might just as well build battleships, and then we will have battleships

and airplanes that are of no value. I would like to hear from that gentleman when you get through.

The CHAIRMAN. We want to finish with the figures, and then we will have Gen. Mitchell make a general statement.

Mr. GREENE. Your work is given up entirely to the experimentation?

Col. BANE. Absolutely: yes, sir.

The CHAIRMAN. And the Navy is doing the same thing?

Col. BANE. Yes, sir; on a very much smaller scale. They have no aviation experiment station. We provide them with most of it.

Mr. GREENE. Do you compare notes?

Col. BANE. Yes, sir; constantly.

Mr. GREENE. And confer with one another as to the results of the experimentation?

Col. BANE. Yes, sir. Of course, we have no absolute means of liaison, you might say, but we try to keep in harmony. I presume we slip up occasionally.

Mr. GREENE. You are both working for the same Government.

Col. BANE. The same Government.

Mr. GREENE. And I am quite sure that you both have the same interest, and you would not possess yourselves of some demonstration in the Army that was going to be of great value to flying, without tipping the Navy off, would you?

Col. BANE. No; we tell them everything they want to know.

Mr. GREENE. Suppose you got out something that nobody knew was under experiment, such a thing as was not likely to be discovered, another helium proposition, for instance?

Col. BANE. That information would go immediately to the Navy.

Mr. GREENE. Then you would want to let it go? I know you do. Now, you folks are setting the pace for commercialization. There is no place in the commercial world where this sort of thing is being done?

Col. BANE. No, sir.

Mr. GREENE. Then, does it not come down to the fact that until the Army and the Navy have, by experiment and administration, begun to reduce the flying game to something like standardized rules and tables of expectation, you can not get business men interested in it.

Col. BANE. Yes, sir; I think you are correct. I think you are correct. I think we are doing a great work to forward commercial aviation and build up an aviation industry in this country. The experimentation at our field is not being developed any other place in the country, and it is work that could not be carried on because there is no organization to carry it on. A manufacturer or engineer has not the funds for machinery available to do that work. All that work is made available to them in the regular publications that we send to all the manufacturers and engineers so that they are kept up to date. We send them publications from time to time, so that any of that information is available to them for their use in commercial aviation, except where it might be a military secret of certain value such as the ariel torpedo, for example.

Mr. GREENE. Of course, the foundation for your appropriation is its military value. That is its first interest, but the development of it must, of necessity, carry along with it undoubtedly a great many

things, to say nothing of the testimony all the time that a commercial manufacturer must have, and ought to have, who is looking to you as the pacemakers.

Col. BANE. They can get it unless it is a military secret.

Mr. GREENE. So that the Government under its policy of developing military needs is actually acting as the pacemaker in displaying the advantages of a great commercial enterprise.

Col. BANE. Yes, sir; with perhaps the selfish motive of getting some value out of the commercial enterprise as a military defense of the country.

Mr. GREENE. I say, under the program of developing a military necessity, which is more than *prima facie*, of course—that is what the real practical peace time value of your experimentation is.

Col. BANE. Correct.

Mr. GREENE. Apart from the military preparation?

Col. BANE. That is correct.

Mr. GREENE. Because it is being undertaken on a scale which we would have to justify in some way. There is a great deal of money involved in it, and it is a science or a craft in such a nebulous stage of development in some respects that a layman wants to be pretty well assured, and if the men who only have to handle appropriations still need reassurance, occasionally, I dare say it must be even a matter of graver concern to the man who is asked to put his own money out of his own private purse into it.

Col. BANE. It is almost impossible to get capital interested in a private aviation enterprise. Confidence has not been established yet.

The CHAIRMAN. Right in that connection, let me ask you this. The Postoffice Department runs an-air mail service between Washington and New York. The Postmaster General told me that they have been running for over a year making a flight to Washington and back from Washington to New York every day, and they have practically had no accidents. They have practically never missed a day. There have been very few days that they have not been able to fly, whether there was storm, or whether there was sunshine. What amount of experimental work do they do in the Post Office Department with airplanes?

Col. BANE. They have built some airplanes which were of an experimental nature to use in carrying the mail, but they have no experimental organization. Our work is all open to them. We supply them with drawings. For example, we have developed the use of air intakes for the Liberty motor, and we are providing them with drawings, and they are now using them on all their airplanes, and we do practically all their experimental work for them. Of course, we are glad to do it for them.

The CHAIRMAN. They are running an airplane schedule between New York and Chicago every day. They are doing a wonderful work there, and they tell me that their planes very seldom have any accidents of any kind, and they go every day in the year, practically. Now, what are they doing, what are they expending, if anything, if you know, for what is somewhat similar to this experimentation expense of \$8,286,000 that you are asking for?

Gen. MENOHER. May I say one thing?

The CHAIRMAN. Yes.

Gen. MENOHER. The Post Office is depending on us, and has depended in the past practically entirely on the Air Service of the Army to carry them through, so most of the credit that they get, or a great part of it, anyway, is due to the Army. We are the ones who are furnishing the engines and the planes, under proper transfer, and the same thing has applied more or less to the Navy. The Navy does not have a big plant. As I said before, their plant is going to be also better established, and their airplane facilities, but the Army is the one, with its larger plant to start with, and its peculiar interest, that has been making it possible for these others to go ahead with their schedules.

The CHAIRMAN. Is that equally true of the Agricultural Department?

Gen. MENOHER. The Agricultural Department has done nothing on its own account in any way. We have done the work for the Agricultural Department in the forestry patrol that we had practically 100 per cent last year in operation. There was one accident only, and they flew over all of that western country on the Pacific slope, over the timber lands, the most dangerous country in the world to fly over, and we had no accidents at all except one. If we were carrying on the same kind of schedule as is carried on between here and New York, where they fly straight away, with no stunt work, with no acrobatics necessary, we could have just as good a percentage as the Post Office has had, if not better. In connection with that, we are developing a patrol between New York and Langley field, a regular patrol, and we have had no accidents from that. You have not heard of it in the papers because there are no accidents.

Mr. GREENE. What they develop really, after all, is not so much outside of the field of adaptability of a type of machine to use for their purpose, is it not?

Gen. MENOHER. That is what it amounts to.

Mr. GREENE. They do not discover anything new in the flying game for control, because, as you say, in your acrobatics you bring those things out? They do not have occasion to test in various altitudes the great difference of operation of the engines, or anything of that kind, but they take a straightaway and go to it like the postmaster on the sidewalk?

The CHAIRMAN. I understood the General to say that everything they used, or everything they have, the Army has developed for them.

Mr. GREENE. That is what I say.

Gen. MENOHER. I do not think there is anything developed at McCook field or anywhere else, where the results that are accomplished the Navy does not know about or has not access thereto; I do not think there is anything. We have felt, with this large experimenting plant, that it was really a duty to our own selves to get it out in the front as far as possible, but it is a duty to the country at large to carry on this experimental work to the end that not only the Government and ourselves but civilian manufacturers might have access to it.

The CHAIRMAN. Of course, what Members of Congress have a special eye to these days is the enormous expense on duplication of work, and if it is possible in any way to save the millions of dollars

that are expended in duplication, it is the desire of every member of every committee that appropriates money to make that saving.

Gen. MENOHER. I understand and I believe that the present scheme of one large experimental plant such as we have is doing that very thing. It is preventing duplication. If we did not have a plant such as we have, the Navy would have to increase theirs, and there would be duplication, but as long as we have a large plant which is out in the front in the matter of experimentation, we maintain there is no duplication.

Col. GILLMORE. I might give one example. The engineering division of the Air Service expended \$900,000 in the development of the Glen Martin bomber, that is now being used by the Post Office Department to carry the mail. We would not have had that if this committee had not appropriated the money to go into it.

Gen. MENOHER. That is the first and most important of the planes of that type that we want to purchase with this money.

Mr. McKENZIE. In this experimental bureau, in case a citizen would come to you with some scheme or idea or invention for the improvement of airplanes, do you give him sympathetic consideration, or do you just brush him aside?

Col. BANE. We give him every consideration, sir. They think they are brushed aside, but, of course, the majority of those cases have no element of value, and we are required to tell them so, but we always consider it very carefully.

Mr. McKENZIE. I read an article a few days ago in one of the papers about a certain gun that some man wanted to sell to our Government, and he did not make a dent in the authorities here, and so he turned it over to foreigners.

The CHAIRMAN. That was the 120-mile gun.

The next item is \$24,803,693, for the purchase of new aircraft and accessories. We were told this morning what your program is in that regard, so far as heavier-than-air planes are concerned. Did you include in that statement the number of balloons that you contemplate buying?

Gen. MENOHER. We contemplate \$750,000 for lighter-than-air machines, and there is \$117,000 for engines.

The CHAIRMAN. I understand, there are no dirigibles among the 700?

Col. BANE. No, sir.

Col. CHANDLER. It is the small nonrigid type which is sometimes referred to as a "blimp." They are valuable for border patrol along the Mexican border or observing fire for field or coast artillery, or other similar purposes. There was a decision by a joint Army-Navy board some months ago on the subject of the larger rigid airships, which prohibits the Army Air Service from asking for that type. There was no member on that board a flying officer, which may account for their erroneous assumption that the rigid airship development depends on the experiments of the Navy Department. The Army is therefore to wait until the Navy develops a rigid airship.

Mr. GREENE. Where is the Navy going to store this thing or carry it?

Col. CHANDLER. I understand they are putting up in New Jersey a large hangar.

Mr. GREENE. I supposed that if they were going to be available largely for naval use, that there is going to be one carried aboard ship.

Col. CHANDLER. It is too large to carry on a vessel.

Gen. MENOHER. That is a development.

Mr. GREENE. That is why I asked why it should be a navy type.

Gen. MENOHER. For long distance of reconnaissance they even contemplate, it is so stated, the abolition of the fast scout cruiser and its replacement by the long-range rigid dirigible.

Mr. GREENE. And then have a land station as a home station?

Gen. MENOHER. Yes. You could not put it inside of a ship. The larger type would take a 10,000,000 cubic feet capacity ship, although they are not building any of that size yet.

The CHAIRMAN. The next item is \$375,000 for the payment of mileage.

Col. FULLER. That is the item put in the estimate when prepared some months ago, and grows out of the fact that there is a law which provides that certain travel for air service purposes must be paid from air service appropriations. Now, the handling of this item of \$375,000 for travel by air and for mileage of Air Service officers is a matter which is related in a way, a certain part of it certainly, to the matter of mileage and travel by air for the rest of the Army, and, as I have stated, it is put in here because the existing law requires that certain travel be paid from air service appropriations. If this be confined solely to Air Service officers this item can be reduced to \$195,000. That would cover the mileage of Air Service officers on ordinary travel required by existing law to be paid from air service appropriations, and would allow \$135,000 for the travel of Air Service officers by air, as now provided by law.

Mr. McKENZIE. Of course, in the pay of the Army we have an item covering this travel pay.

The CHAIRMAN. Mileage?

Mr. McKENZIE. Mileage.

The CHAIRMAN. Yes.

Mr. McKENZIE. Now, do we understand that if we allow this item, we could deduct that amount from the travel pay?

Gen. LORD. The existing law, a law enacted something more than a year ago, provided that the travel of officers connected with the Air Service should be paid from the appropriation for air service; that is from the project itself. That was permanent law, inasmuch as it said that hereafter such and such would be the procedure. That is still the law.

The CHAIRMAN. I remember when that law was before the committee that the matter was explained at the time. The committee finally agreed to approve that provision, and it is now, as you say, permanent law.

The next item is for the purchase of land in the Philippine Islands, at Paranaque.

Col. FULLER. I suggest, Mr. Chairman, that we consider that matter of the purchase of land for a station at Paranaque together with the construction necessary to make the station, an item which follows.

The CHAIRMAN. The next item? You mean you want to consider the two items together?

Col. FULLER. Yes, sir; consider that with item 718, the last item in the following general group on the same page.

Gen. MENOHER. Page 4 of the master sheet.

The CHAIRMAN. \$667,000 for construction. Well, we will be very glad to hear you upon the subject.

Col. FULLER. We presented to this committee and to the Senate committee at the last session a project for the Philippine Islands in a tentative way and asked for an appropriation of \$750,000. It was explained at the time that it was desired to use that money to provide for a couple of squadrons there on the ground, which were to work out practically what the requirements for the Philippines are. That item was cut down to \$350,000, and the project for the Philippine Islands, in which this committee, I believe, is especially concerned, embraced a provision for one squadron and one balloon company at Camp Stotsenburg, and also there will be provided therefrom funds heretofore appropriated for a squadron and two balloon companies at Fort Mills, which is on Corregidor Island.

However, the greater portion of that installation in the coast defense on Corregidor Island is provided from other funds, which are not, however, available for the construction of any shelter for the troops; so, as the matter stands, with the money heretofore appropriated one observation squadron will be provided for at Camp Stotsenburg and a squadron and two balloon companies at Fort Mills.

The CHAIRMAN. By the way, the Fort Mills appropriation, I suppose, was allowed by the Subcommittee on Fortifications of the Appropriations Committee.

Col. FULLER. Yes, sir; and I might state, Mr. Chairman, that that was an appropriation made in accordance with hearings had before the late war. We now desire to provide for two pursuit squadrons, the only pursuit squadrons, the only ones to be in the Philippines, and one observation squadron, one air park, and one photo section, a small photographic section. Paranaque is on the beach near Manila and is as near to the large post of Fort William McKinley as a flying field can be secured. It was necessary, in the nature of the problem to be met there in the Philippines, to find a suitable piece of ground for a landing field which is also on the water, and that has forced us to a quite restricted choice. We would expect to acquire this area—this section of land—by condemnation, and confidently believe that we will not have to pay \$375,000 for it. The construction required at Paranaque amounts to \$667,000 and is of the very simplest type of construction that can be put up and still be worth maintaining.

The CHAIRMAN. What is the construction work to consist of—wooden construction?

Col. FULLER. Yes, sir.

The CHAIRMAN. How long will that last, with the ants eating it up as soon as you begin to put it down?

Col. FULLER. We will be able to use that for quite a long time. I dare say that the committee are all very familiar with the history of Fort William McKinley.

The CHAIRMAN. Yes.

Col. FULLER. And this will meet our requirements for a long time to come, for the reason that it is of the very simplest type of construction in the way of expeditionary hangars, and the floors and

foundations under them should last, I should say, for quite a number of years.

The CHAIRMAN. Well, I remember being at Fort William McKinley 19 years ago, and as I now recall they were constructing and had constructed up to that time some concrete buildings.

Col. FULLER. That is my recollection, but the last time I was there there were a great number of frame buildings standing, but, Mr. Chairman, may I suggest that we have an officer here, a construction officer, who has done a great deal of work in the Philippines, who may give us some information on that.

The CHAIRMAN. Fort William McKinley, as I recall, was out by the Deposito and water works.

Gen. MENOHER. No, sir; that is on the south side of the Pasig River, along the line of the Laguna Divide, and there are only three or four concrete buildings built on the whole reservation.

The CHAIRMAN. They were going into camp out by the water-works.

Gen. MENOHER. There is no permanent camp up the river in the direction of the Deposito or waterworks. There is a concrete building in the waterworks.

The CHAIRMAN. There were a lot of soldiers in some camp near there at the time there.

Col. GILLMORE. I wonder if you have not in mind the prison?

That is a concrete building that is at Fort McKinley. They built a large concrete prison.

Gen. MENOHER. They have a Helen Gould memorial built there and one other building, a Y. M. C. A., and I think a hospital has since been built, and those are the only concrete buildings in the place. I was there seven years ago and was stationed there for two years, and those frame buildings were still in first-class condition. We had a limited force of three or four men on this work all the time, with their ant-killing apparatus, to keep the white ants down, but the houses were still in first-class condition, and that type of construction, in that climate with the proper care, will last 20 or 30 years.

Gen. LORD. There were two concrete buildings for officers' quarters in 1914 right next to the hospital. I forgot those.

The CHAIRMAN. I see you want a little of this money for construction along the border.

Col. FULLER. The rest of this item, the major item there, consists of \$150,000 for hangars at Ross field near Los Angeles, Calif. There are no hangars there. It was not desired to ask Congress for the money for these hangars until the field had been acquired by the Government, notwithstanding the fact that it was offered the Government for \$1 by the patriotic citizens out there. Congress has since the last appropriation act passed a resolution permitting the purchase for \$1 of this very excellent balloon school site. There are no hangars there now.

The next item is \$200,000 for portable sectionalized structures for use along the border. Col. Gillmore has that item.

The CHAIRMAN. How far from Los Angeles city is Ross field?

Col. FULLER. It is at the old Baldwin race track site.

Gen. MENOHER. Arcadia is the town.

Col. FULLER. It is at the foot of Mount Wilson, and much work is done from the mountain side, which reduces probably one-fourth of the cost of operation of that place as a balloon school.

The CHAIRMAN. All right, Colonel, we will be very glad to hear from you.

Col. GILLMORE. In connection with the border stations, Mr. Chairman, the Air Service wants to establish, and has established partly, with the ordinary tent activities, 10 stations. It has been the policy of the War Department to get all the troops along the border under cover in cantonment construction as rapidly as possible, and these stations are to be located at McAllen, Laredo, Douglas, El Paso, Eagle Pass, Sanderson, and Nogales. The stations are to cost about \$20,000 apiece. They are to be temporary construction and consist of two sets of barracks, a mess hall, laboratory, administration building, and three sets of noncommissioned officers' quarters.

The CHAIRMAN. The towns you have named are all right on the boundary line?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. Practically all right on the boundary line?

Col. GILLMORE. That covers the Mexican border from the Gulf right through to California. I think that it is economical to put troops into cantonment construction, rather than keeping up tentage, especially in that country. You know about the serious storms they have there, and the amount of damage they do to the expensive tentage, and the troops are much more comfortable, and it adds to the morale of the men to be in some sort of cover rather than living in tents, and the chances are that we will keep troops along the border for some time. We have for the last 10 years at least without much prospect of change.

Mr. MCKENZIE. Colonel, if we go this far, do you have any idea that at the next session of Congress they would want a water system at each one of these places and a lighting plant?

Col. GILLMORE. No, sir; that is provided for. Of course the troops can not live there without some sort of water system. That has already been established.

The CHAIRMAN. In connection with the towns?

Col. GILLMORE. By connection with the towns; yes, sir; but where they are located near ranches the available facilities are very crude, but the men get along. You can do those things, but you can not live in tentage year in and year out and be comfortable, and it is not economical.

Mr. MCKENZIE. The thing that I have in mind, Colonel, is that probably these stations are temporary. That is the understanding now.

Col. GILLMORE. Yes, sir.

Mr. MCKENZIE. And if peaceable relations were to come about along the Mexican border of course we would not want them, but if we can get pinned down once with a few buildings there, our experience has been that we never can let loose, and we will have the overhead of all these buildings to carry on. What do you think about that? Do you think we can abandon them afterwards?

Col. GILLMORE. I think so; we could abandon them. There is a lot of salvage in this temporary construction. It is sectionalized, standard stuff that we can take down. It is portable, and we can

move it, and we are building it with that idea, Mr. McKenzie, so that we can move it wherever we have to go. If we were to abandon a border station and establish a station with a field division or squadron division, or we could move that temporary construction to a division camp.

Mr. McKENZIE. That is true if we do not go, as I have suggested, and put in permanent construction.

Col. GILLMORE. We are not doing that, sir. You could not do that with \$20,000.

Mr. McKENZIE. I understand that.

Col. GILLMORE. Yes, sir; I see what you are thinking of; you think that next year we may come back and want a water system.

Mr. McKENZIE. I do not say you will, but there is that possibility.

Gen. MITCHELL. Mr. McKenzie, I might say that there is no intention of that sort in this case. This is merely a line of observation along the Mexican border where flights of these airplanes are stationed. We put them there last summer, and they have remained on through the winter, with a great loss in tents as shelter. I think it would be cheaper than keeping them in tents. As long as there is a Mexican border we have got to have an Air Service of some sort.

The CHAIRMAN. Well, if we had had that kind of a service working at the time of the raid on Columbus, in New Mexico, that thing might have been prevented.

Gen. MITCHELL. I believe to-day that if anything like that occurred we could hit Villa within two hours with airplanes.

Mr. McKENZIE. Was there anything new in that, if they had two days in advance that you was coming?

The CHAIRMAN. The record in the War Department, in the office of the Chief of Staff, shows that.

Gen. MITCHELL. That is merely an outpost line. Our concentration is behind, at Kelly Field.

The CHAIRMAN. The question came up when we had this matter up with Gen. Marshall yesterday, whether the troops would be comfortable with wooden construction in that country, or whether it would not be better to put up temporary buildings of adobe to house them in, which are much cooler, and which stand a storm as well as wood or metal.

Gen. MENOHER. Better.

The CHAIRMAN. Is that a more expensive construction?

Gen. MENOHER. I think very much more so, on account of the labor. There is a great deal of labor involved in the construction of adobe buildings. They are fine, when you get them, for that climate.

The CHAIRMAN. All right, Col. Fuller, you may proceed.

Col. FULLER. The next item is for the improvement of aviation stations and balloon schools, two items, one of \$40,000, and one of \$135,000, which Col. Gillmore will discuss.

Mr. GILLMORE. We have purchased, as you know, Mr. Chairman, on March Field and Carlstrom Field land under the last bill Congress passed, the real estate bill. In order to keep up the flying training school there, there is a small expenditure necessary to keep this going and put to it into first-class condition, and for the preparation of auxiliary landing fields. You know, in school work you maintain a flying field in the different stages of primary work. They can not all land in the one aerodrome. They have to go off in different

auxiliary fields and work over them, because a great deal of the work is just going up and landing, and going in and landing, and you have to have air room, especially with new and untried pilots. They have to have plenty of room. We do not spend very much money on maintenance at these fields, and we did not want to until we know what the Government policy was as to our purchase. There has got to be some money spent there on roads and bridges, and small structures, and things of that character, that run the matter up to \$40,000 for those two fields. It is made a special item because it is not regular maintenance. It is something new that we are having to establish.

The CHAIRMAN. Now, in that very connection, we passed during the war a bill for the Air Service, for \$640,000,000 originally, and gradually other appropriations ran the total to \$1,051,000,000. Can you put into the hearings at this point a statement as to the number of purchases of land for aviation fields, or for any other purpose connected with the Air Service, so that we may be able to inform the House how much money of that total sum was expended in the leasing or purchase of land?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. And also the amount expended at the various stations in the construction of buildings?

Col. GILLMORE. I have that data all available and will insert a consolidated statement answering this question and your former one on this subject.

The CHAIRMAN. That will be very helpful. I do not know whether the exact number was stated, but I think that Gen. Menoher stated this morning that he had enough Liberty motors to cover your needs for this current year. It might be well to state in that connection how many of those engines you have, because, as I now recall, the Chairman of the Committee on Naval Affairs stated in the House when the military appropriation bill was up for discussion last year, that there were something like 110,000 Liberty motors on hand. I knew that there was not anything like that number.

Gen. MENOHER. There were only some 17,000 Liberty motors constructed, all told.

Col. GILLMORE. We have a statement we got out, showing the motors of the different types, and the planes of the different types, where they are stored, and generally their condition. That could be put right in the record. This photostat copy gives you all that information. It shows every type of airplane we have, every type of motor we have, and the number.

The CHAIRMAN. If you could put in two statements of this character, I think they would be helpful: One, a statement to show what you had on hand at the close of hostilities on November 11, 1918, and another statement showing what you have on hand today.

(The matter referred to is as follows:)

Statement of airplanes in United States as of Feb. 29, 1920.

Airplanes.	In condition to use.	Not in condition to use.	Total.	Miscellaneous.	Factories.	In transit.	Receiving depot.	Grand total.
Active.....	4,087	1,105	5,192	10	564	385	377	6,528
Obsolescent.....	833	1,042	1,875	2	.....	31	.....	1,908
Obsolete.....	78	960	1,038	2	2	2	.....	1,044
Experimental.....	242	398	640	4	1	21	20	686
Grand total....	5,240	3,505	8,745	18	567	439	397	10,166

There are no accurate figures available as to number of planes on hand on November 11, 1918.

To that date the following planes had been manufactured:

Training planes:

JN4-A to D.....	3,746
SJ-1.....	1,600
Penguin.....	300
JN-4 and 6-H.....	1,690
S4-B and C.....	472
E-1.....	12
SE-5.....	5

Total training..... 7,825

Service planes:

DH-4.....	3,431
Bristol Fighter.....	27
Handley Page (85 per cent complete).....	101
LePere.....	7

Total service..... 3,566

Miscellaneous..... 369

Total..... 11,760

To November 11, 1918, 5,071 planes had been delivered by our allies.

Statement of engines in the United States Feb. 29, 1920.

Engines.	In commission.	Out of commission.	Total.	Miscellaneous.	Factories.	In transit.	Receiving depots.	Grand total.
Active.....	16,704	2,993	19,697	35	683	584	380	21,377
Obsolescent.....	4,553	2,187	6,740	1	.....	80	.....	6,821
Obsolete.....	504	3,516	4,020	5	.....	14	282	4,321
Experimental.....	645	1,942	2,587	4	.....	49	476	3,116
School.....	15	41	56	.....	.....	.....	.....	56
Grand total....	22,421	10,679	33,100	43	683	727	1,138	35,691

At Air Service stations, Feb. 29, 1920.

Types.	In condition to use.	Not in condition to use.	Total.
HSA, 150 horsepower.....	1,283	423	1,706
HSE, 180 horsepower.....	1,421	116	1,537
HSF, 300 horsepower.....	242	107	349
HSI, 150 horsepower.....	765	152	917
Liberty, 12 A.....	9,755	990	10,745
Liberty 12, N.....	868	11	877
Le Rhone 80.....	2,312	594	2,906
Le Rhone 120.....	43	555	598
Lorraine Dietrich.....	9	1	10
Salmon 230.....	6	44	50
Sunbeam 12.....	2	.....	2
Total.....	16,704	2,993	19,697

There are no figures available as to number of engines on hand on November 11, 1918. To that date the following engines had been manufactured:

Liberty 12.....	13, 574
OX-5.....	8, 318
Hispano-Suiza.....	3, 912
A7-A.....	2, 250
Le Rhone.....	1, 057
Lawrence.....	450
Gnome.....	280
Bugatti.....	8
Miscellaneous.....	781
Total.....	30, 630

To November 13, 1918, 6,745 additional engines had been secured from our allies.

The CHAIRMAN. The next item is "Professional books and periodicals, \$319,117."

Col. FULLER. That includes all the miscellaneous expenditures for the Air Service. That can be covered for the information of the committee best by taking it item by item. The Information Division of the Air Service requires \$50,000 for printing. Col. Hickman will explain the necessity for that.

The CHAIRMAN. Before the colonel begins on his statement I want to call attention to the key, the master-key papers. I notice that one of the items embraced in this total is for claims for damages, engineering, \$2,500, and property \$147,500. Is that injury to property by airplanes?

Col. FULLER. Yes, sir. The words "engineering" and "property," as shown here, refer to our divisions of the Air Service organization. The law as passed last year provided for the settlement of claims not to exceed \$250 for any one claim, when adjusted and settled in a certain way, and a total not to exceed \$150,000, \$250 for each individual claim, and that work is carried in the same manner this year.

The CHAIRMAN. Does the total damage at \$250 a claim run up to \$147,500?

Col. FULLER. It does not. That, as I say, was the language in the bill last year. We believe that that can be very materially reduced. This item was made up, I will explain, when these estimates were first prepared last August, and we could not foresee the total requirements in this respect as accurately as we can now, after the major portion of the fiscal year has passed. I think that if we were allowed not over half of that it would meet all the requirements. The advantage to the Government in having such a provision is to permit a claim to be settled right there, instead of having it run on and having them put in a whole lot of other things which increases the total amount of the claim. If it can be settled right on the spot we can save money for the Government.

The CHAIRMAN. And the indignation on the part of the person whose property is destroyed?

Gen. MENOHER. Who can not see damages forthcoming.

Mr. GREENE. What is the nature of the damage and the extent of the cost of the damage?

Col. FULLER. Unfortunately, when a man's engine stops he must pick out a good field in which to make a landing, and the best ones are generally the cultivated ones.

Mr. FIELDS. And it does not make any difference if it is in wheat?

Col. FULLER. That is it, exactly.

Mr. GREENE. How much damage does it ordinarily do by alighting in such a place?

Col. FULLER. Those damages are all small.

Col. FICKEL. I handle those cases in the office, and the largest property damaged has not exceeded \$250, but we have had personal injury damages running over that amount.

The CHAIRMAN. But you are not allowed to pay them?

Col. FICKEL. Yes; we are, up to \$250, but over \$250 we can not pay them.

Mr. GREENE. When people see an airplane coming down like that, do they get under it?

Col. FICKEL. It is the hardest thing in the world to keep people from getting in the way of an airplane landing. They see it in the air, and they think it is a feather. I was in charge of a control stop on the transcontinental race, and I had six policemen to keep the people back from the field for landing, and the six policemen could not do it. I had to go out and make a speech to them to get them to stay back. We have had several people killed by landings. People always think that an airplane will not damage them when it comes down.

Mr. GREENE. How far does the so-called contributory negligence enter into those sort of claims?

Col. FICKEL. You can not say that a small child, 10 years old, can contribute any negligence.

Mr. GREENE. I understand.

Col. FICKEL. I tried to make a landing in the country myself last summer, and a crowd of children ran out, my child being among them, and I did not land; I crashed. You can not stop them. They will always do it.

Mr. GREENE. How much damage is one of your planes likely to do if it lands in some obscure field or place where a man on a flight might have suddenly to come down?

Col. FICKEL. In the last damage claim that was settled in our office the owners asked for \$104 for damage to their wheat field. They were allowed \$50 for it.

Mr. GREENE. That brings up this question. Are you not rather annoyed by what they call in other similar activities ambulance chasers, those that are ready to find all manner of destructive damage?

Col. FICKEL. We have tried to encourage them to submit their claims without lawyers, and we have generally succeeded in that. We tell them that lawyers will prejudice their case.

The CHAIRMAN. By having this cash you are able to do that?

Col. FICKEL. That is the idea of having the cash to pay them.

The CHAIRMAN. You are able to pay them so promptly that they do not need a lawyer?

Col. FICKEL. Yes, sir.

Mr. MCKENZIE. The very purpose of this is to get prompt action before the claim spreads and grows?

Mr. GREENE. The lawyer does more damage than the machine?

Col. FICKEL. The ambulance-chasing variety of lawyer, I refer to, of course.

Col. FULLER. The item of printing, \$50,000 for the information division and \$30,000 for the engineering division, is a very important matter, and a thing that would not be understood, if it were not explained in detail. Col. Hickam has the next item.

Col. HICKAM. There are two classes of printing that we have done, that which is done at the Government Printing Office, and that which is done by contract at McCook Field. The Air Service printing contracted through the Government Printing Office is done by the information group. This consists of blank forms and of cards of one kind or another needed in the Air Service, and not supplied by the Adjutant General's Department.

There is another item of some \$12,500, which is for information circulars. The Air Service is trying to do in a few years, that is, build up literature, that it has taken many years in other branches of the service to do. Officers are continually being placed on duty that they know nothing of, and there is no literature available for them to study their new duties. They are provided with this information, and it is done by printed circulars, manuals, etc. We have gotten out a great many of them, and this work is limited only by the amount of personnel we can put at it.

At McCook Field I printed specifications for material, both engine and plane, and a great many technical reports are printed there that require the supervision of the men to get them up, and we find it is impracticable to have those printed at the Government Printing Office, because of the delay incident to sending the proofs back and forth, and the mistakes that are made. It frequently becomes necessary to get out a report right away, and to use our own personnel and equipment, and the delay incident to having it done in the Government Printing Office, while it is not very long, is very serious, and about half of that is done at McCook field.

That class of information includes many of the reports which are used by commercial firms, manufacturers, etc., and McCook Field and the information group are the two sources of getting information out to the public, and allowing the public to obtain the information in regard to the experiments that are made at McCook Field and all through the Air Service. This work is considered very important, and with sufficient funds and personnel we could make a great deal more available to the country.

Col. FULLER. The next item is the publications, \$6,000 for the information group and \$5,000 for the engineering group.

Col. HICKAM. These publications, themselves, consist of technical books, particularly, and magazines, both domestic and foreign. This art is so new, that much of the information is contained in periodicals, and we have to keep a subscription of these going. Each one of these is carefully gone over and material contained that will be of value to the air service, and also much that is of value to the commercial interests of the country is abstracted and put in such a form as will be made available.

The CHAIRMAN. Have you a library?

Col. HICKAM. Yes, sir; we have one of the most complete aeronautic libraries in the world.

The CHAIRMAN. Where is it?

Col. HICKAM. It is at the office of the director, sir.

The CHAIRMAN. In Washington?

Col. HICKAM. Yes, sir. We gather, through our military attachés and through the consular agents and other governmental agents, practically all of the aeronautical information in the world.

The CHAIRMAN. All that is printed?

Col. HICKAM. And much that is not printed. There are many extremely valuable reports that come in to us from the consular agents and from the military attachés of the Army and the Navy. We print only such portions of it as seem to be of especial value, which is very carefully abstracted.

The CHAIRMAN. Is the printing of those contained in this item of publications, or in the former item of printing?

Col. HICKAM. The printing of that is included in the item of printing. The publications are the sources of our information.

Col. FULLER. The next item is "Special services; Miscellaneous services, \$66,100." Col. Gillmore will handle that.

Col. GILLMORE. The first item under that is automobile services. We frequently have planes crash on cross-country work, where it is necessary to go out and bring in a pilot passenger and get some one to truck the plane back to where it can be shipped, and there is no other appropriation that we can take that out of. If it is not fixed especially we will have no way of doing it, sir, so that is a small item, but a very necessary one to carry on that work.

The blue-printing service is for making blue prints of different things that we need to reproduce in that form.

Miscellaneous services, \$24,000, is put in to cover things that we can not always foresee, Mr. Chairman. There are matters come up that we can not cover. Our service is new, as you will appreciate, and we have not the information that the other services have to prepare their estimates on. They know about what is going on and what has gone on in the past.

The storage service, \$25,000, is put in to meet unexpected storage that comes up.

All of the claims are not liquidated yet. They are still coming through from the manufacturers' plants, especially those claims that are in dispute. The manufacturer is holding the articles which he has in this plant, that really will become the property of the Government, but which he will not let out of his plant until his claim is settled. All the claims in dispute are before the War Claims Board, and that item, we think, is sufficient to care for it. We hope we will not have to use all of it, but we have to keep warehouses at the great centers, New York, Boston, Buffalo, Pittsburgh, Cleveland, Chicago, and San Francisco. It was more economical to rent space there to take care of some of this surplus matériel, that it was to move it. We hope, during this year, to either sell this surplus matériel, or get it into one of our main storage houses. The reason we ask for the Curtiss Elmwood plant is for that purpose. We hope to concentrate everything in the Middle States and Eastern States in the Curtiss Elmwood plant, things that we can not sell.

The CHAIRMAN. You spoke about the adjustment of contracts with the manufacturers?

Col. GILLMORE. Yes, sir.

The CHAIRMAN. About how much money is involved in the contracts that up to the present time have not been adjusted, in the Air Service?

Col. GILLMORE. It runs into a great many million dollars, the amount that has not been absolutely settled. On the statistical showing gotten out by the War Department, we would make a rather poor showing, but our liquidation section is in such shape that in a very short time those things are going to come in to be settled, and then our percentage will jump away up. We have been working, plugging along, and have gotten them in shape where now, in a short time, most of the contracts will have been settled.

The CHAIRMAN. Can you tell the committee about how much money is involved in the unsettled contracts?

Col. GILLMORE. I would like to put that in the record, and make it absolutely accurate to the dollar.

The CHAIRMAN. That will be all right.

Gen. MENOHER. I think Col. Fickel has a statement here.

Mr. MCKENZIE. Is there any tendency on the part of those claims to grow? Do they think of something that they have not thought of before?

Col. GILLMORE. It is only those contracts in which the Government felt that the claim of the contractor was unjust, and they could not by negotiation arrive at a fair settlement from the Government's point of view. The contractor, under the Dent law, had a right to carry that up to the War Claims Board. If he can not make a settlement with our bureau or with any bureau of the War Department, then it goes along up to the War Claims Board.

The CHAIRMAN. But those are informal contracts.

Col. GILLMORE. Yes, sir; and a great many formal contracts.

The CHAIRMAN. A great many formal contracts where the amount involved is in—

Col. GILLMORE. Yes; where the amount involved is in final settlement. The Curtiss contract has now been settled.

The CHAIRMAN. You will put into the proceedings, then, as I understand it, the total amount that is involved in these claims against the Government?

Col. GILLMORE. Yes, sir. I can give the total amount from this statistical report. The value of the uncompleted portions of suspended contracts amounted to \$509,716,000. There have been liquidated to date \$105,162,000. That has been the work of our liquidation board to date.

The CHAIRMAN. So that you have over \$400,000,000 unliquidated?

Col. GILLMORE. Unliquidated.

The CHAIRMAN. Now, can you tell us how much of that represents informal contracts and how much represents properly executed contracts?

Col. GILLMORE. I can get that for you and put it in the record.

The CHAIRMAN. If you kindly will.

Statement showing unliquidated formal and informal contracts of Nov. 11, 1918, and Mar. 30, 1920.

Value unliquidated formal contracts Nov. 11, 1918:	
Original amount.....	\$704, 583, 452. 61
Completed portion.....	251, 113, 350. 33
Uncompleted portion.....	453, 470, 102. 28
Value unliquidated formal contracts Mar. 30, 1920:	
Original amount.....	197, 092, 978. 12
Completed portion.....	56, 324, 846. 71
Uncompleted portion.....	140, 768, 131. 41

Value unliquidated informal contracts Nov. 11, 1918:	
Original amount.....	\$58,964,129.16
Completed portion.....	4,033,810.53
Uncompleted portion.....	54,930,318.63
Value unliquidated informal contracts Mar. 30, 1920:	
Original amount.....	4,273,608.82
Completed portion.....	1,884,888.36
Uncompleted portion.....	2,388,720.46

Mr. McKENZIE. Colonel, you have stated, I believe, that the surplus you have on hand that is to be disposed of amounts to something like \$41,000,000?

Col. GILLMORE. Yes, sir; approximately \$45,000,000 is our figure.

Mr. McKENZIE. What are some of the principal articles making up that surplus?

Col. GILLMORE. What are some of the principal items?

Mr. McKENZIE. Yes; that run into value.

Col. GILLMORE. Probably, the single item that would represent the greatest value is raw material, steel of different kinds. We have disposed of a large amount of steel that is of a standard stock, that the manufacturer can use. Unfortunately, a great deal of that steel was special alloy that the ordinary manufacturer can not use. His tools are not fitted for it; his shop equipment is not fitted for handling that special kind of steel. What we are trying to do, with the shortage of steel, is to have them change their equipment if it is possible, and in that way get rid of a great amount of this special alloy that was made up.

Mr. FIELDS. Is it especially hard?

Col. GILLMORE. Some of it. I do not know whether you are familiar with the steel industry, but in making up motors, the engineer asks for special specifications, or steel that will stand special strains, and what he considers to be the best suited for that particular kind of motor. Some of that you can not use in ordinary mechanical work.

Mr. McKENZIE. It is high priced?

Col. GILLMORE. Yes, sir; and it is high priced. Our machine tools and our equipment in the way of tools runs into a great deal of money, especially special tools that are built for special jobs. We have sold most of our standard machine-tool equipment, but the special tools that we made for special jobs for different kinds of motors are hard to dispose of. It is hard to find a manufacturer who wants to buy it and experiment in changing and having attachments made so that he can work that special tool.

Mr. McKENZIE. Do you have a large surplus of wire on hand, or have you turned the wire back?

Col. GILLMORE. We have disposed of a great deal of that.

The CHAIRMAN. You stated that you have some lumber on hand?

Col. GILLMORE. We have some lumber. We are having no difficulty in disposing of lumber.

The CHAIRMAN. So I understood you to say.

That disposes of the principal item of \$53,851,690, as shown by the Book of Estimates, and you have in a measure pointed out the need of some of the items in the construction estimate that you have submitted for approval, but you have not gone into all of them. I see there is one item, \$400,000, on page 12 of the bill, for the acquisition of land by purchase or condemnation, at the following places—

Col. FULLER. May I explain that, Mr. Chairman?

The CHAIRMAN. If you will.

Col. FULLER. We have somewhat modified the wording here and there, which eliminates that item for the purchase of land for an airship station, which we are doing pursuant to action taken by the War and Navy Departments with reference to rigid airships, as explained to you by Col. Chandler, and in place of that item we have \$375,000 for the purchase of land at Parranaque, P. I., so that your sheets which you have followed cover all of the items of the \$60,000,000.

The CHAIRMAN. I see. Then we do not need to continue on that item or the following item of the tentative draft of the bill.

Col. FULLER. No, sir. We will submit the wording to take the place—

The CHAIRMAN. Of the wording that has previously been submitted?

Col. FULLER. Yes, sir.

The CHAIRMAN. I wish you would do that in the hearing.

Col. FULLER. May I invite the attention of the committee, Mr. Chairman, to the fact that these expenditures for training and for the operation and the purchase of aircraft have been increased from \$53,000,000 to \$58,000,000, with a corresponding reduction in construction?

The CHAIRMAN. I see.

Now, the committee will be glad to hear any general statement that Gen. Mitchell may desire to make.

Gen. MITCHELL. Mr. Chairman, I shall first call attention to the way in which this estimate has been prepared. It has been prepared especially on the basis of getting fighting equipment for our air forces first, and not buying a lot of buildings and grounds. You will note that in the principal item nearly \$24,000,000 is asked for new flying equipment, the use for which I shall explain—\$9,000,000 is asked for upkeep and repair of this equipment, and \$8,000,000 for experimentation on airplanes, motors, and accessories. That makes a total of \$41,000,000 out of the total appropriation of \$60,000,000 asked, and it is all for aircraft, or for maintenance of aircraft and their accessories.

A year ago, when I came back from Europe, the Air Service, which had consisted of about 290,000 men and some 20,000 officers, was being disbanded and there was an accumulation of all sorts of material all over the country without any particular arrangement with a view to its use in this country. All of this material was intended primarily for shipment to Europe, most of it to be assembled there for use on the front.

What was allowed to remain of the Air Service was given the problem of rebuilding an air force for the Army for use either with the mobile Army or as a means of national defense in case of the coming across the seas of any force against us. We were given for that purpose 11,000 men and 1,348 officers, of whom 1,200 were temporary, and the rest were regulars. We were not allowed to fill vacancies among the temporary officers. Of the total number of enlisted men about 60 per cent had to be used outside of the actual tactical airplane units, in looking after property and storing it, in schools, and general reorganization activities. With the equipment on hand we have organized 27 squadrons that are distributed as follows: Two squadrons in the Philippines, that now have their full observation equip-

ment where before there were only a few caretakers; two squadrons in the Hawaiian Islands, where before there was a detachment that had nothing but seaplanes. They are all on an operating basis. They have the best equipment we have. They have their wireless, their cameras, their guns, and their bombs.

The CHAIRMAN. Are those peace-time squadrons?

Gen. MITCHELL. On a peace-time basis: yes, sir. We have one squadron in Panama and are going to establish more there, but the commanding general says he does not believe they should come until he gets accommodations for them.

Along the Mexican border we now have 14 squadrons. Five are on border duty, constantly patrolling the border. They extend all the way from Brownsville across to San Diego on the Pacific.

The CHAIRMAN. Are these the aviators that are occasionally referred to as having landed in Mexican territory, and having been held up by bandits for ransom? Are they a part of that force?

Gen. MITCHELL. Yes, sir; they are a part of that force. Men are bound to get lost in a country like that occasionally, particularly when they are not used to it. You must expect a certain amount of this in the air, particularly with new men. Improved methods of navigation, meteorology, and radio control will greatly lessen it, if we can ever get those adjuncts.

The CHAIRMAN. Is not a good portion of that boundary traversed by the Rio Grande River?

Gen. MITCHELL. Yes, sir; but that is covered with haze, mists, and fogs at times, and all sorts of things, and people in the air occasionally get lost.

Mr. MCKENZIE. I am certainly gratified to hear you make the statement you have just been making, and I wonder what sort of information the newspaper writer had some little time ago who published an article in the newspapers that we could not get together two squadrons in the United States, and we were absolutely helpless even before Mexico.

Gen. MITCHELL. That was the case a year ago now, most decidedly, but that is not the case at the present time.

Mr. MCKENZIE. It was not a year ago that I read that statement.

Gen. MITCHELL. Well, if that statement was made since September it was wrong. When I went down there in June, last year, and prescribed the organization along the border, there was practically nothing. That force has been built up since then.

There are, in addition to that, four bombardment squadrons at Kelly Field, and four pursuit squadrons organized into groups

Now, in so far as the equipment is concerned, and in so far as bombs are concerned, and their guns, it is as good as you can get out of the DH airplanes, which are the only ones we have. Their enlisted personnel is about 30 per cent short. Their transport is not particularly good; they are deficient in radio equipment, and have no meteorology to speak of. Their photographic equipment is fair, and it is a well-organized force; that is, the command is well organized, and the system of work is good.

The CHAIRMAN. Where is that?

Gen. MITCHELL. That is at Kelly Field, San Antonio, Tex. There are 200 ships available, of which about 60 per cent are in commission. At that same airdrome we have the only pursuit group in the service

which is organized also into four squadrons with British equipment. They have 31 pilots, where they ought to have 100, but their organization and methods of work are well perfected.

The border is being handled in the following manner: The surveillance group is deployed in flights of six airplanes each along the border like an outpost line; the pursuit and bombardment are held at Kelly field, which is a central place from which they can be dispatched to any place along the border in case of necessity.

Now, in addition to that, we have started a nucleus of two squadrons at Langley field, on the York Peninsula in Chesapeake Bay, a dirigible airship station at the same place fully equipped, and a balloon station at Lee Hall, near there. That is a station for beginning to work out our coast-defense problem, which is special with us in this country, as distinct from anything we had in Europe. I will explain how that is being worked out later. We have no pursuit, attack, or bombardment aviation there, but we have two observation squadrons that have been doing work with the Coast Artillery, surveillance along the coast, and studying out the details of aerial coast defense.

The CHAIRMAN. Would it interrupt you if I asked you a question?

Gen. MITCHELL. Not at all, sir.

The CHAIRMAN. Right in connection with that, those squadrons are operating with the coast defenses?

Gen. MITCHELL. Yes, sir.

The CHAIRMAN. Do we appropriate for the planes for those squadrons?

Gen. MITCHELL. Yes, sir; they are furnished from the planes still on hand.

The CHAIRMAN. Well, that is a fortification matter.

Col. FULLER. The war material left over from the war is what is being used for it.

Gen. MITCHELL. All we have is the DH-4 equipment.

The CHAIRMAN. Do you call for any money for these squadrons?

Gen. MITCHELL. Not out of the fortifications money; no, sir.

The CHAIRMAN. I know; but do you ask for some part of the money in this bill for these squadrons?

Gen. MITCHELL. Mr. Kahn, these squadrons are used either for that purpose or are used with the mobile Army. Due to our mobility our air units can be used anywhere and are not necessarily fixed in position like a permanent fortification.

The CHAIRMAN. What I have in mind is this; I have always strenuously opposed the division of responsibility for appropriations for the military establishment. It ought to be in one committee. I think it is an anomalous condition that we occupy at the present time, but if these squadrons are used for coast defense, it seems to me that this committee has nothing to do with supplying them with the money for it.

Mr. GREENE. Well, I think, if you will permit me, that perhaps we would base our jurisdiction on the fact that we supply the personnel and all their special equipment for these same coast defenses, the rifles, the Infantry equipment, and all the coast artillery personnel, equipment, and all that sort of thing, and all the high-caliber guns that are used by the personnel we supply.

The CHAIRMAN. We supply the personnel for the coast-defense forces, and we provide the money for paying the coast-defense officers or the enlisted men in our bill, but we do not supply a dollar for the buildings or the guns or the munitions for coast defenses.

Mr. GREENE. That is the emplacement guns and the permanent structures, I think, where the line is drawn, but all the mobile, movable stuff that is a part of the mobile army, or equipment attached to the personnel, or rifles, and all the rest of that—

The CHAIRMAN. Well, one of the gentlemen who testified this morning stated that he got some of his appropriation for some of the equipment in the fortifications bill, and you, yourself, stated that that was due to an anomalous condition that prevailed.

Mr. GREENE. I am not in sympathy with the divided jurisdiction, but I think, upon the line which rightly or wrongly has been adopted in the past, we certainly can claim jurisdiction over the equipment in the Air Service that may cooperate with the coast defenses.

The CHAIRMAN. I do not propose to divide the jurisdiction, if I can help it, but I simply want to call attention to the condition that exists.

Mr. McKENZIE. I might add there that I agree with the chairman about the unwisdom of a division of appropriating authority. That is bad enough, but, in my judgment, it would be infinitely worse to have the responsibility of operating our flying corps divided. I think it ought to be absolutely centralized.

The CHAIRMAN. You are right. I only have in mind some one's testimony this morning that some of the plans for the fortifications were furnished in the fortifications bill.

Col. FULLER. I might explain that item. I referred to it myself, and, as I believe I stated, it was an appropriation made before the war, and before this general proposition had cleared itself very much. However, that appropriation specified that it was available only for certain limited purposes. It did not include the construction of barracks and quarters, but covered equipment and the building of buildings to shelter the equipment. There is a line which reads that way, and it was an appropriation made before the war.

The CHAIRMAN. Well, I am sorry to have taken up the time in this side discussion. We will be very glad to have you continue, Gen. Mitchell.

Gen. MITCHELL. I spoke about the force we had on the border, and I wanted to show the gentlemen of the committee what we have done in the last year. Here are some photographs of them. In addition to the observation elements that we have at Langley Field, which, as I said, were designed for the purpose of working up a system of coast defense (and I want to explain after a while what we mean by coast defense, which is different from what is generally accepted), we have two squadrons on Long Island now which are engaged in similar work. Now, in that connection, we have no observation units deployed on the Pacific coast at all, but only the squadrons that I mentioned before—one along the Mexican border, and the other which we are using for forest patrol. We are informed by the Agriculture Department that we saved more by our forest patrol last year than the total amount appropriated for the Air Service by Congress.

As to our training system, we have installed the primary schools which are to take the place of the ground schools and the flying schools together, which were used heretofore. Each one of those is capable of taking care of 200 students at a time. They are capable of expansion to take care of 600.

The CHAIRMAN. How long is the course?

Gen. MITCHELL. We believe we can put those students through those schools in about six months; the minimum time is four months. By that time they are able to fly the equipment, and then take up their specialized training, depending on whether they go into observation, pursuit, attack, or bombardment aviation. We now have the primary schools in operation, and they are operating satisfactorily.

The CHAIRMAN. Will you state where these schools are?

Gen. MITCHELL. One in Florida at Carlstrom Field, near Arcadia, and the other in California at March Field near Riverside. We are asking for no training equipment at all for these schools. We are going to use up what we had on hand this coming year, although we think we can get better training equipment, I might say, later on. Of the different kinds of training equipment we have about 3,000 old planes of every kind on hand, many of which must be rebuilt to make them safe to fly.

The CHAIRMAN. 3,000?

Gen. MITCHELL. Yes, of all kinds; and I might say at this time that we have about 1,500 DH-4's both in the hands of the troops and in storage. That is all.

Now, the next provision we have made for training is to have specialized training when the students leave these primary schools, according to the kind of aviation they go into, whether it be pursuit, attack, bombardment, or observation. We have not been able to install that training yet because we are so short of personnel in the schools. That training is being given in the units themselves at present. It remains for us to establish a school to train superior officers in the Air Service to handle large air units. This is most important and is the least known in our service. It is intended to put that school at Langley Field, and we hope to get it going this autumn. It would be a school for the Air Service something similar to the school at Leavenworth for the rest of the Army. That is a big proposition for us.

As to training with specialized services, such as the Artillery and Infantry, we have detachments which at least will carry out a certain line of instruction this year at Fort Sill, Okla., at Camp Knox, Ky., at Camp Bragg, N. C., and at Camp Benning in Georgia. Those outfits are there now. They will be improved from time to time.

As to our air parks, we have one park on the Mexican border, with repair, salvage, and supply facilities. We should have about six or seven times as many parks. We ought to have one park for every four squadrons. In other specialties such as photography, when I came back here I found very little organization. The photographic part of it I believe we have gotten on a better or as good basis as anything else. It is operating well now, and the technical section gives good development work.

Mr. GREENE. May I ask you a question there about this photographic section?

Gen. MITCHELL. Yes, sir.

Mr. GREENE. Did you find it necessary, from your war experience, to develop the interest and necessity for this, to get the help of civilian experts?

Gen. MITCHELL. Yes, sir, most decidedly.

Mr. GREENE. How are you getting on now?

Gen. MITCHELL. We are going on now with military personnel, inducted into the service from former specialists who have had nearly three years military training now.

Mr. GREENE. They have been instructed so that they can carry on the work?

Gen. MITCHELL. Yes, sir. I think our photographic school at Langley Field now is as good as any anywhere. It is an excellent school. I wish you could go down there and see that photographic school. It is coming along fairly well now, and gives very good promise for the future, particularly in regard to the cameras with the long focal length lenses and the film cameras. We want to do a lot of developmental work and study, if the appropriation carries the money for that purpose.

That, in general, is the plan we have adopted for the Air Service, it has been approved by the War Department, and it will be filled in and perfected as we get personnel. At any rate, everything is being fixed, everything being done to put into actual working order a system under which we can know just what to do in all cases. You will recall that I came before you a year ago and asked for equipment and Congress provided, as Gen. Menoher said a while ago, sufficient only for maintenance but no new airplanes. We have had no modern equipment whatever. Our engineering division has devised the best material we can get in this country. It has taken our specifications as to what we require, and has incorporated them in the form of sample airplanes. We now have airplanes which are the best we can produce in this country just at this time, either for pursuit, attack, bombardment, or observation. They have types of each, and they are ready to go into production now.

To get this machine together and all its parts running, has really been a big job. It remains to perfect that a great deal, but still a tremendous amount has been done. We believe that the constructive work done by the Army Air Service during the last year is ahead of any other governmental development during the same time.

Now, as to our plans for the future, we are developing equipment, from an American standpoint, for our own use in this country, and that predicates the possibility of an enemy coming across the water or through the air. In either case, they will be strong in the air. For that purpose we must develop our pursuit aviation first. We must have aviation that can meet the enemy in the air, force him to fight, attack him, and destroy him. We have not a single modern pursuit plane in this country to-day, we have some samples as models. We ask for only 400 in this case, and with the additional personnel you are going to give us, that is 16,000 men, we propose to double that pursuit aviation which will give us eight squadrons.

In addition to our pursuit aviation, we must develop our attack aviation, that is, aviation for attacking the enemy on the ground, or on the water, and we are going to develop our bombardment aviation, with a view to establishing an air service as the second line of defense of the country, counting the Navy first, the air force second, and the Army third.

Now, much has been heard along that line, and they all say. "How are you going to do it?" I shall explain our scheme for doing it. During the war the battles were all fought over the land, they were not fought over the water between the air forces. There were practically no activities on the water at all, except among some light patrols from shore bases. There were no actions between masses of aircraft over the water, nor were aircraft developed specifically for the attack of battleships.

Now, our scheme for attacking naval vessels is roughly as follows, using the same equipment we use in the Air Service on land. According to this diagram [pointing], this airplane represents pursuit aviation which has to attack and clear the way so as to allow the other airplanes to operate. This represents bombardment, this represents attack aviation, and this represents some bombardment aviation equipped with torpedoes. These torpedoes can be placed on any medium or heavy bombardment airplane. We have no trouble in sinking ships now, except armored ships, that is, war vessels having protective decks of 5 inches of armor plate and sides corresponding. The projectiles that are used against battleships by land guns are not particularly efficient, because to pierce the armor requires weight and velocity to such an extent that they can carry very little explosive. The biggest shells, 16-inch for instance, carry only about 50 pounds of explosive and depend for their efficiency on the fragmentation of the shell itself to destroy. The range of cannon, of course, is limited to the distances that you know of. The greatest range of the guns we now have is 40,000 yards, that is the 14-inch gun, and the 16-inch gun, which, by the way, costs \$500,000 with its mount, has a probable range of 60,000 yards and throws a projectile that weighs one ton and has about 50 pounds of explosive in it.

Now the problem of piercing a deck of a ship with a cannon is one which resolves itself into weight and velocity. To get sufficient velocity from gravity alone means you have to drop it from a 16,000 foot height. We have projectiles designed now to be dropped from a height of 16,000 feet, but the percentage of hits you will make at that height with the means we have now for projecting bombs, is comparatively small, and, although we can hit, we can get greater efficiency from other methods. Underneath the armor of the ships, they are susceptible of attack by means of any explosives which may be exploded in the water. These mines or explosive bombs are effective at from 30 to 40 feet. The ordinary mines the Army uses weigh from 1,200 to 1,400 pounds and have 200 pounds of explosive. The Navy depth bomb is from 400 to 500 pounds and the biggest torpedo the Navy has uses about 700 pounds of explosive and weighs over 3,000 pounds. A torpedo projected to be used from airplanes weighs about 2,000 pounds, and has 500 pounds of explosive. The bombardment airplanes which we are projecting will hold from 5,000 to 6,000 pounds of bombs, and each bomb has approximately half of its weight in explosive. In other words, a 500-pound bomb has 250 pounds of explosive; a 1,000-pound bomb has 500 pounds of explosive, and so on. We are now projecting 3,000-pound bombs with 1,500 pounds of explosive, and we now have a certain number of 1,000-pound bombs. These pictures are bombs beside a man [indicating] are the 1,000 and 500 pound bombs, respectively.

Now, if we have airplanes that carry six 1,000-pound bombs, each of which has 500 pounds of explosive in it, and if we hit within 30 feet of those war vessels on either side of them—in other words a strip 60 feet wide, and the total length of the latest ships of the Hood class is about 840 feet; therefore, you have a strip 800 feet long and 60 feet wide, exclusive of any hits on the decks whatever, within which you will disable the battleship. In the opinion of some flying naval officers I have talked to, if we hit the ship itself, the effect of the explosion of these great projectiles will be disastrous to the personnel, particularly if hits are made on or near the bridge funnels, ventilators, or turrets.

Our plan for attacking and getting those things into position so that they will be effective, is as follows: Our ability to hit anything with bombs is entirely a question of how close we can get to it. If we can get close down over this building, we will never miss it. We will never miss making a hit on an ordinary target at 500 feet altitude. If it is not defended by both airplanes and anti-aircraft devices, we can come right down on top and just lay bombs on it. Our ability to hit anything is entirely dependent on the amount of protection it has around it, and, primarily, it must have protection from hostile airplanes. The question of anti-aircraft gun defense, particularly on ships, is an easy one to solve. We have had a great deal of experience in the attack of anti-aircraft defenses in Europe. The anti-aircraft defense on land can be hidden under camouflage, under trees, or in holes in the ground; but on ships, they are absolutely on deck, and they can not put them any other place. They can not go under the water and hide them. We propose to neutralize those by a direct attack at low altitude with machine gun fire, cannon fire, and dropping small projectiles as a diversion, under cover of which the large bombardment airplanes can attack at low altitudes.

Suppose we have aviation organized as it is today, in pursuit and bombardment groups. Take a section of the coast from Chesapeake Bay to Boston, which is the most vulnerable place on the Atlantic coast. We have a line of observation by airplane along the coast, that is, a station at Langley Field, Chesapeake Bay, near New York, and other places, which can pick up and report vessels coming within 200 miles of the coast. Suppose that the pursuit, attack, and bombardment groups are concentrated in the northern part of Pennsylvania, with an efficient radio system so that you can communicate with the airplanes operating over the sea from our shore stations. Suppose the hostile fleet is located and our pursuit aviation attacks them and gets a favorable decision against their pursuit aviation so that our heavy bombardment airplanes can operate. Suppose this hostile fleet is operating in detachments of four capital ships with each division; that is, a division of the fleet has four capital ships (or battleships) in it. They are the only ones we need consider seriously. Suppose we detail one attack group, which is four squadrons, and attack one division of battleships with it, and have one bombardment group attack the same division of the fleet. We have on the average 100 airplanes in a group at a time, of which there are ordinarily 60 for duty, or, with 4 squadrons in a group, 15 airplanes per squadron. All our air force can be handled in the air by radio communication. We then detail

one attack squadron to each battleship to occupy it with gun-fire so that the heavy bombardment airplanes can come down low. If we have four squadrons in a group of our bombardment aviation, and each squadron has 15 airplanes and each plane has six 1000-pound bombs (that is, 6,000 pounds), if they drop by squadron 15 bombs at one time at that ship, any one of which, if it takes effect, will place that ship out of the line, and have the ability to attack six times in this way, we believe the battleship will be destroyed.

That is the system we are working on now. We have the torpedo in mind always as a secondary proposition. These torpedoes have to be launched 16 feet from the water in a horizontal position, and, if an airplane launches them, they are absolutely at the mercy of any attack from other airplanes above them. And the torpedo has to be launched at the present time not more than 2,000 yards from the ship to get a good percentage of hits. In this position, the airplanes are very much exposed to the action of gun-fire from the battleship.

In addition to explosive bombs, our Chemical Warfare Service has now filled some bombs with thermite, and are working on smoke producing compounds and gaseous substances which are heavy and which we believe will have a good deal of effect on the personnel of the battleship. So, of course, with the great number of methods being developed, we are great believers in the air attack against naval vessels. We believe the Air Service will put any navy out of business if we are given a chance to develop, and we are considering our coast defense from that standpoint.

Mr. McKENZIE. May I ask you a question right there?

Gen. MITCHELL. Certainly.

Mr. McKENZIE. I think there is a good deal of merit in what you are saying, and, if we furnish the money and permit you to carry out your plans along those lines, won't we have absolutely removed all danger of invasion of our country by any foreign enemy?

Gen. MITCHELL. These things have to be developed, Mr. McKenzie. I do not think, even if this thing is a success and the bombs work out, we could possibly carry out to depend absolutely on it to a sufficient extent for some time, that is, to the exclusion of everything else.

Mr. McKENZIE. I understand.

Gen. MITCHELL. I do not think there is any doubt about its efficiency in the defense of the country.

Mr. McKENZIE. I am thinking of the possibility.

Gen. MITCHELL. I think it is there.

Mr. McKENZIE. Just to follow that and take your view of it: Other nations, of course, will be doing this same thing.

Gen. MITCHELL. I can tell you about the developments of other nations.

Mr. McKENZIE. And, if that is true, our ideas of invading any other country would be rather questionable?

Gen. MITCHELL. We have to whip their pursuit aviation first, before we can do anything else.

Mr. GREENE. Is this not true of all military evolution: As soon as you have the thing that puts other things out of business, than something else is brought forth that puts that thing out of business?

Gen. MITCHELL. That is often said about military instruments, Mr. Greene. The Air Service, however, is not an instrument—it is a force. The evolution of the military art has depended principally

on three things—first, improvement in armament; second, in number of effectives at the critical point; and third, on communications or speed with which you can convey information and concentrate your effectives. Those three things are the things that predominate. You take it in Napoleon's time: The action of an army was opened up by the artillery galloping forward and opening fire at case shot range, the infantry coming up through the intervals in the guns. In our Civil War, the infantry rifle had the power to stop the artillery beyond 500 yards, and the artillery preparation, as is the case today, was begun. In this war, our mechanical transportation told, and we began to get an enveloping fire and a reverse fire that had never been the case before. The old saying is that one rifle on the flank is worth five in front, or one rifle on the rear is worth ten rifles in the front.

In the air, we can concentrate fire in three dimensions, that is, on the same plane, from underneath, and from above, and for this reason no large airplane or collection of them can resist pursuit attack which combines development of fire, numbers, and speed at the same time. That is the reason we always bring the single seaters to shoot down those ships. That is the reason I mentioned that the Navy's scheme of having a flying boat barrage around the coast is absolutely fallacious. If we develop our armament and our ability to get at the other man through pursuit aviation, it is probably our most important single element of national defense. No Army or Navy can operate, nor can any attack or bombardment aviation act without adequate pursuit protection.

Our engineering section develops all the types of equipment we need. Col. Bane, for instance, made a slight mention of superchargers. That is a means of taking airplanes up to a very high altitude. The military purposes of that thing are these: We carry on reconnaissance at a distance, getting up as high as we can. If we go at low altitudes over an enemy's country, we are absolutely at the mercy of their pursuit aviation. That supercharger takes the exhaust gases from the engine to a turbine, the turbine rotates at about 22,000 revolutions per minute, and actuates air compressors which deliver air to the carburetor so as to compensate for the rarefied atmosphere up high. That allows the aircraft to go up to altitudes that were impossible before. And with the supercharger, we have now gotten to 36,000 feet, and a 400-horsepower engine at those altitudes gives as much horsepower as one of a thousand horsepower would before. Furthermore, as we go up to a higher altitude, we get less resistance from the air, and, therefore, we get more speed. We expect to get up to an altitude of from 40,000 to 50,000 feet before very long.

The CHAIRMAN. Thirty-six thousand is the highest you have reached now?

Gen. MITCHELL. We can go higher. And when we get to those altitudes, our speed is over 200 miles an hour while we are up there with the crude improvised equipment we have now, and we believe we will get speeds of from 300 to 500 miles an hour eventually.

In addition to that, if you have any assistance from the wind, you can see what your speed is going to be. Maj. Schroeder encountered a wind the other day which we believe was 200 miles an hour at about 30,000 feet. That brings up the question of meteorology, which

we have not got for our service yet. All the upper atmosphere should be mapped as the ocean currents are now.

Mr. McKENZIE. You do not mean the wind would have very much effect on a machine going at the rate of 500 miles an hour?

Gen. MITCHELL. Its speed would be increased or decreased by the speed of the wind. Suppose we are going in the direction of the wind at 500 miles an hour, and the speed of the wind is 200 miles an hour, we would get 700 miles an hour.

Mr. FIELDS. If you were going in the reverse direction, it would take away the same amount of speed, would it not?

Gen. MITCHELL. It would take away the same amount.

Mr. FIELDS. Therefore, in traveling against the wind, it would materially diminish your speed?

Gen. MITCHELL. Absolutely. So far as we know, we have no winds but from west to east in this country, unless we find in the South we have another variation, but we can go 300 miles north or south with little trouble.

But before I leave the question of air attack against naval vessels I desire to mention that parachute flares, which we drop from airplanes, are absolutely blinding to personnel below them at night. A vessel is very easy to attack at night, and it can not hide, because you can see the wake. It is very interesting to see those things in Chesapeake Bay. And when you are up over the Capes, 10,000 feet, you can see 40 to 50 miles out. The visibility is splendid.

The CHAIRMAN. But during war a ship puts out its brilliant lights.

Gen. MITCHELL. It does until it is attacked by aircraft, and then it has to flash its searchlights so that it can see the airplanes. It can not conceal itself, because you can see the wake and other things. There is always a white wake, which is phosphorescent nearly everywhere, and you can not miss it.

You spoke of duplication. There is a great deal of it. I have just spoken about the fact that the Army has various air stations along the coast for the service of the Coast Artillery, so that we have to maintain the service of observation along the coast all the time anyway. We will be able to do it up to about 200 miles off the coast with the present type of planes we have now. The Navy projects the same sort of thing in the same place. In other words, the Navy is sort of coming ashore with aviation. It proposes to do forest patrol work and all sorts of things I am told. That is the most flagrant sort of duplication that has ever occurred in any service anywhere, because it not only puts in a second element but also takes just so much naval aviation away from the fleet where it belongs. I think it ought to be put in the law that all air operations from shore bases not attached to the fleet should be conducted by the Army Air Service, and that all air service attached to the fleet should be handled by the Navy. Of course all the air service should be combined into one force, but if that is not done the above suggestions should be followed.

The CHAIRMAN. How much can you save in duplication by doing that?

Gen. MITCHELL. We could save now about \$11,000,000 on the present combined operation of this thing alone, as follows:

(A) COAST DEFENSE.

1. The following amounts would be saved in the cost of maintaining an efficient coast defense, aviation, by consolidating the Army and Navy services. This saving would result from the reduction in the number of stations which would be maintained by the Army and Navy, respectively, should they operate separately.

2. The Navy have and are projecting a system of stations on the coast, designed for the purpose of maintaining coast patrol with flying boats and seaplanes, and providing bases for the aviation units assigned to the fleet.

3. The Army are maintaining and projecting, with money already appropriated by Congress in the fortifications bill, a system of stations designed for the purposes of protecting the principal cities from attacks by hostile aviation, regulating the fire of the coast defenses and making such surveillance patrols as would be needed by the Army commander.

4. It will be possible both land and water planes from the Army stations, but it will not be possible to operate land planes from the Navy stations. Due to this fact, in a combination of the services it would seem advisable to eliminate many of the Navy stations, because they do not as a rule provide for the operation of land planes, whereas the activities now being carried on at certain Naval stations can just as well be carried on from the Army stations with the consequent reduction in overhead. The following Navy stations may be eliminated or consolidated with respective Army stations indicated below:

Navy:	Army:
Rockaway.	Newdorp, Staten Island.
Yorktown.	Langley Field.
Hampton Roads.	Langley Field.
Coco Solo, Canal Zone.	France Field, Canal Zone.
Anacostia, D. C.	Bolling Field, D. C.
New London, Conn.	Stonington, Conn.
Dutch Flats, Calif.	Rockwell Field, Calif.
Boston, Mass.	Weymouth, Mass.
Narragansett Bay.	Kingston, R. I.
Culebra, Canal Zone.	Balboa Fill, Canal Zone.
Portsmouth, N. H.	Portland, Me.
Hawaii.	Ford Island, Hawaii.
Philadelphia aircraft factory.	Army factories and experimental stations.

5. The details of the amounts saved on the above stations follows:

Station.	Maintenance and repair of equipment.	Maintenance and repair, building and grounds.	Additional construction at stations.	Saving due to reduction in personnel necessary to operate. ¹
Rockaway.....	\$155,000	\$60,000	\$184,000	\$282,000
Yorktown.....	10,000	10,000	25,000	60,000
Hampton Roads.....	272,000	110,000	475,000	402,000
Coco Solo.....	115,000	20,000	.....	170,000
Anacostia.....	62,000	18,000	.....	105,000
New London, Conn.....	2,600	5,000	37,000	\$ 33,000
Dutch Flats.....	106,000	.....	214,000	\$ 276,000
Boston.....	3,200	5,000	214,000	\$ 33,000
Narragansett Bay.....	1,300	10,000	120,000	\$ 33,000
Philadelphia.....	\$ 220,000	\$ 125,000	110,000	.....
Culebra.....	5,300	5,000	95,500	\$ 66,000
Portsmouth.....	1,300	5,000	.....	\$ 33,000
Hawaii.....	.....	.....	1,000,000	\$ 132,000
West Coast Dirigible Station.....	.....	.....	2,775,000	.....
Total.....	963,700	373,000	5,249,500	1,625,000

¹ In arriving at the saving indicated, an average cost of \$1,200 for pay, food, and clothing of enlisted men has been used, and an average pay of \$3,000 for officers. Further, only the number of men which would be saved by a consolidation is used as a basis—not the number of men which would probably be assigned to the Navy station, which in most cases is at least double the amount used in arriving at the figures in the above total.

² The estimated expenses on maintenance and equipment at Philadelphia are \$440,000. It is figured that only half of these expenses would be eliminated, and accordingly only \$220,000 has been entered above.

³ No estimate of the number of men probably assigned to these stations by the Navy has been obtained. The figures are based on the least possible number which could accomplish the work planned.

(B) EXPERIMENTAL.

1. Both the Army and Navy are maintaining and continuing experiments. So long as these experiments are for separate services, it is difficult to eliminate duplication; but by a combination of services the following duplication may be eliminated:

(a) Investigation of materials used for construction of aircraft.....	\$1,000,000
(b) Development of aviation instruments (50 per cent saving).....	50,000
(c) Investigation of material used in construction of engines.....	167,000
(d) Development of engines.....	500,000
(e) Development of aircraft (50 per cent saving).....	750,000
(f) Miscellaneous experiments at air stations.....	137,000
Total.....	2,604,000

(C) AVIATION SCHOOLS.

1. In the operation of aviation schools, there has already been an elimination of duplication by the Army undertaking to train the Navy pilots in the operation of land machines. Due to this elimination, \$500,000 was struck out of the Naval estimates by the joint Army and Navy Board. This figure is merely a tentative figure, however, as the amount of saving involved depends to such a great extent upon the extent of the program considered.

(D) GENERAL OVERHEAD.

1. It is rather difficult to estimate the actual saving which would result in the combination of operation, production, supply and general maintenance of equipment, by consolidation of the services, due to the fact that no definite program has been approved for either service, and the percentage of saving on the above items depends upon the size of the respective services considered.

2. Based on the size of the present services, there would be a 10 per cent saving in operation, due to decrease in the personnel needed to accomplish the given result, which would be obtained by the greater flexibility in assignment.

3. A 50 per cent saving would be obtained in overhead necessary to oversee production of equipment. A 5 per cent saving would probably result due to the placing of consolidated contracts.

4. Probably 20 per cent saving would be secured in the cost of furnishing supplies, due to decrease in operating personnel, size of stocks necessary to be carried, etc.

5. Very little saving in maintenance and equipment would result due to consolidation of the present establishments, except as obtained by the consolidation of stations; but with extended operation of land planes by the Navy, there would be at least 20 per cent saving in the maintenance of equipment.

Totals, coast defense:

Maintenance and repair of equipment.....	\$953,700
Maintenance and repair, buildings and grounds.....	373,000
Additional construction at stations.....	5,249,500
Saving due to reduction in personnel necessary to operate.....	1,625,000

8,201,200

Total, experimental.....	2,604,000
Total, aviation schools.....	500,000

Grand total.....	11,305,200
Operating personnel (present establishments)..... per cent..	10
Procurement and production..... do.....	50
Supplies..... do.....	20
Maintenance and equipment..... do.....	20
Maintenance of airdromes and ground organization throughout United States and overseas possessions..... per cent..	50
Combined meteorological organization..... do.....	50
Combined radio and communication organization..... do.....	50

The increase in the efficiency of a well-trained personnel for handling an air service can not be calculated, but would result in a great saving. This would be accomplished by a united Air Service.

In addition, the following Government and civil agencies are concerned more or less with aeronautics, which lead to increased expense and considerable confusion in all aeronautical work:

GOVERNMENT AGENCIES COOPERATING IN AERONAUTICS.

Aeronautical Board, Washington.
 Army Air Service Experimental Laboratory, Dayton.
 Bureau of Entomology, Washington.
 Bureau of Fisheries, Washington.
 Bureau of Mines, Washington.
 Bureau of Standards, Washington.
 Forest Products Laboratory, Madison, Wis.
 Forest Service, Washington.
 Interdepartmental Board on Commercial Aviation.
 International Aircraft Standards Board.
 Joint Board, Washington.
 National Advisory Committee for Aeronautics, Washington.
 National Research Council, Washington.
 Navy Aerodynamic Laboratory, Washington.
 Post Office Department, Washington.
 Weather Bureau (Washington and principal cities).

CIVIL AGENCIES COOPERATING IN AERONAUTICS.

Curtiss Engineering Corporation.
 Leland Stanford, Jr., University.
 Massachusetts Institute of Technology.
 Throop Institute of Technology
 Washington State University.

The CHAIRMAN. So that if the amount carried in the naval bill as it passed the House were to be cut down to \$4,000,000 you would be giving the Navy everything that it could use for work peculiar to its operations?

Gen. MITCHELL. We do not believe that any two units should have control in the air of the surveillance of the coast. If you have, you are going to have the same thing that occurred in England. If you remember, the Germans flew over the British coast in broad daylight, and there was nothing there to hurt them. We can not see why any system should utilize the flying boat as a means of reconnaissance from the coast. It can not possibly work in war against pursuit aviation. It is just a thing to be shot down like a pigeon. We use flying boats in time of peace for the adjustment of artillery fire and for the matter of training and practice, and those same things can be used in the preliminary stages of war and will fit in with our present aviation system. But we do not believe in maintaining a great lot of stations up and down the coast in time of peace. We do not need a lot of buildings in time of peace. We should put our money into airplanes. All we need is a certain nucleus of stations, of which Gen. Menoher asked for five on the Atlantic coast this year and three on the Pacific coast. You can certainly avoid a great deal of duplication there. Of course, I believe in uniting all aviation; that is the only ultimate answer; but, at any rate, we can certainly avoid a lot of duplication. All we ask in this appropriation bill is enough pursuit aviation for two groups and enough bombardment aviation for one group, and we ask enough for attack aviation to begin a group—one-half a group. We only ask for 50 ships of attack. And I might say the attack airplane we have at McCook field now is very interesting. I do not know of any other, any place, like it. It has quarter of an inch of armor all over the vital parts, one cannon and 8 machine guns, and two motors, and when loaded will weigh not over 10 pounds to the square foot.

It looks like a very good proposition. You take an aeroplane like that, we believe it will be very effective against tanks. We believe it will put tanks out of business. You can imagine what that ship would do with a mob in a street here. It would just clean things up; or in attacks on places like Mexico, or any place where they have not the most efficient sort of air defenses and pursuit aviation.

Although we may not be the last word in the world in our proposed equipment, still we believe we have developed it far enough to do well with it. And right now, if we put it in construction, it will be the equal in effectiveness, at least in this country, of anything that can be brought against us, say, for another year or so. After that it will be obsolescent.

The CHAIRMAN. Of course, the statement has been frequently made, so that I guess a great many people in this country believe it, that everything we have at the present time is so far out of date that it is practically ready for the scrap heap and ought to be scrapped.

Gen. MITCHELL. It ought to be, everything we have now, absolutely. We have not a thing fit to go to war with now.

The CHAIRMAN. That statement, then, according to your opinion, is correct?

Gen. MITCHELL. Absolutely so. You take the S. E.-5 pursuit plane we have on the Mexican border now; it has a speed of 120 miles an hour. The modern pursuit ship has a speed of 150 miles or over.

The CHAIRMAN. What countries have ships of that speed?

Gen. MITCHELL. All of them—that is, England, France, and Germany. We have ships experimentally, that we can put in production right now that have those characteristics. At the time of the armistice, we had pursuit ships of 120 miles an hour. If we had a war now, our enemies would have pursuit ships with a speed of from 150 to 200 miles an hour. At the time of the armistice it took us half an hour to go up 15,000 feet. Pursuit ships go up now 20,000 feet in 15 minutes—from 15 to 20 minutes. The highest ceiling we had was around 20,000 feet for service purposes. Now you can go up around 30,000 feet. That is in a year and a half. Day bombardment ships carried from three to four hundred pounds of bombs. They can now carry double that. Our night bombardment ships carried a maximum of 1,600 pounds. They frequently carried over the front only from eleven to twelve hundred pounds. They can carry to-day upward of 5,000 pounds in the night bombardment ships.

The dirigible airships now would be very superior to those used in the war. Although before the war, and when the war began, the rigid airship was more developed than any other aeronautical equipment in existence—that is, the German Zeppelin was very far along. So that the way aeronautics is progressing we have to keep up all the time or be hopelessly distanced. We hope to have a 700-horsepower engine in about four months. The first air-cooled engine we expect to develop this year, and as to other engines we have plans for them. We can make as good metal in this country as in Germany, and for each type of aeroplane we propose to build one of metal hereafter. I do not think you can get a much more economical use of the money for national purposes than the money asked for in this appropriation act.

The CHAIRMAN. Have you any information of what is being done by the Oriental countries?

Gen. MITCHELL. We know that Japan is going into aviation strongly.

The CHAIRMAN. I saw an article in one of the magazines only a week ago, in which the statement was made that they have both German and French machines and that they are operating with them and are trying to reproduce them.

Gen. MITCHELL. I do not know how many German machines they have, but they got some of them as a result of the armistice.

Mr. GREENE. What has been your experience and the experience of men in science and mechanics generally with the Japanese?

Do they go now much further than to copy something already made? Have they begun to develop independent and original investigations and initiative?

Gen. MITCHELL. I have been over with them several times and my opinion of their ability is very high.

The CHAIRMAN. The Japanese have shown in scientific work that they are original and that they follow up what they get from the white nations along original lines?

Gen. MITCHELL. They certainly do.

The CHAIRMAN. And make decided improvements?

Gen. MITCHELL. They are a very practical people. There are only 21 miles of water between Asia and America across Bering Strait.

The CHAIRMAN. You get up into cloudy skies up in that latitude?

Gen. MITCHELL. That is so at times.

The CHAIRMAN. You have a great deal of fog up around there.

Gen. MITCHELL. Only along the coast though, Mr. Kahn.

The CHAIRMAN. But if they have secured all the German Islands in the North Pacific, as would seem probable under the peace treaty, their extreme eastern frontier has been pushed a thousand miles nearer the Hawaiian Islands than it was before.

Gen. MITCHELL. I want to speak about that fog proposition. That fog only lies around the coast and it only extends north to the Aleutian Islands in the wintertime. It is just as clear as a whistle in the wintertime around Bering Straits.

The CHAIRMAN. I have been told by sailors that Bering Sea region is rarely free from fog.

Gen. MITCHELL. That is so in summer but it is as clear as a whistle in the wintertime. I spent two years in Alaska.

The CHAIRMAN. I went within about 250 miles of it on the trip to Asia, but I never got up there.

Gen. MITCHELL. We are going to fly up there this summer.

Mr. FIELDS. How soon do you expect to visit other planets?

Gen. MITCHELL. I do not know. I saw that somebody in Philadelphia said he was willing to go.

The CHAIRMAN. Is that all you have to tell us?

Gen. MITCHELL. Yes, sir. I would like to have you hear Col. Hensley now.

The CHAIRMAN. You have made a very interesting statement.

AIRCRAFT IN GERMANY.

STATEMENT OF COL. W. N. HENSLEY, JR., AIR SERVICE.

The CHAIRMAN. The committee will be very glad to hear what you have to say.

Col. HENSLEY. One of the members of the committee asked whether I had been quoted correctly. I colored that statement very carefully when I gave that interview. I did not say what has been stated, but that the Germans say a fleet is obsolete and that is the way they actually feel. I went over on the R-34 to England and spent a couple of months there. For the last five months I have been in Germany. What I have seen there is simply amazing to me. I have seen so much and so many revolutionary things that I am still in a daze.

In England such men as Admiral Fisher, who was the man who had the foresight and daring to take some ships from the home fleet and send them to the Falkland Islands, and Sir Percy Scott, whom you all know, have said openly, in speeches and in newspapers, that you can "sack the lot," meaning the Navy; build up your air force.

Now, if you can visualize a ship as they say the latest type of battleship is, the *Hood*, which cost over \$30,000,000 in England. That probably means from \$40,000,000 to \$45,000,000 in the United States. We can build 450 all metal aeroplanes for that amount of money, to carry from 3½ to 4½ tons of bombs. I do not think there is anybody here after hearing the argument I heard from the under-secretary of state for air, who could help but say the day of the Navy, of the capital ship, is over. You no longer have a line of defense, you have a surface or solid of defense where both your horizontal and vertical angles are changing continually. Even now most naval officers will say—if the same amount of money expended in the battleship was put in torpedo boats, that the torpedo boats would sink the battleship. The torpedo boat has to operate on the surface, the submarine the same way. How much truer is it of aeroplanes operating in a solid, where their altitude direction and distance change every instant. You can see their argument is based absolutely on facts as they believe them.

One thing that impressed me in Germany was the fact, as Mr. Kahn says, we can practically scrap our aviation. We are obsolete. We can not call one type of ship a flaming coffin. Every one we have is a flaming coffin. The Germans have gone to the all metal design. I have pictures here to substantiate practically everything I say.

The CHAIRMAN. By ship you mean aeroplane?

Col. HENSLEY. Yes, aeroplane. They have revolutionized the design. They are not only revolutionary, but they are efficient in their daring. We have always understood, and they have said in England, you could not produce a monoplane of greater span than a certain set type—very small. Here is a picture of a monoplane with a span of 130 feet, all metal. When I first saw that aeroplane I said to the pilot, "If that aeroplane will fly, a battleship will fly." He said, "If you will get in, I will take you for a flight." These pictures are all of the same type. When he got in, I said, "When are you going to true this up and test out the wires." He said, "We

never do that with an all-metal plane." If you realize what that means—you no longer have to have a big personnel for the upkeep of planes. Your wooden and fabric planes have to be trued up all the time; you have continually to test out the wires. The machine shown in that picture had not been flown for six months. He took it out, and there it is taking off from the water [exhibiting picture]. That weighs $7\frac{1}{2}$ tons, kilo tons; that would be $8\frac{1}{2}$ tons. It carries $3\frac{1}{2}$ or about 4 tons of bombs. That big plane will fly 100 miles an hour when you could not get more than 74 or 75 miles out of a wooden and fabric plane if you tried. Its radius or cruising distance is 1,000 miles. These are some of the planes we will have to contend with in the air.

The CHAIRMAN. What is that in there [indicating]?

Col. HENSLEY. Those are the engines, sir.

The CHAIRMAN. Underneath the fusilage?

Col. HENSLEY. Yes, sir. The pilots are down in the lower boat or float—a combination of boat and float.

Here is another type of all-metal aeroplane. They do not put these in hangars; they do not have to have hangars for these. That one was seven weeks out in the open, carrying passengers every day, and riding on the water every night. All they pay attention to is the engine.

The CHAIRMAN. The planes are made of metal?

Col. HENSLEY. All metal; yes, sir. There is nothing in there except the wood of the propeller.

The CHAIRMAN. So that the question of linen or some other cloth to cover the wing space does not enter into it?

Col. HENSLEY. No, sir; it is all metal; no wood in the spars and ribs, and no fabrics covering the wings.

Here is the latest type of passenger-carrying plane, all metal. It carries 28 passengers at 130 miles an hour. This is revolutionary, in that it carries the gasoline tanks inside of the wing sections, and the mechanics crawl inside the wings to attend to the engines.

The CHAIRMAN. While the plane is in flight?

Col. HENSLEY. Yes, sir. That will fly on two engines, so that there is absolutely no danger of a forced landing. That plane will operate between Berlin and Friedrichschafen and take about three hours to go on a journey that takes 36 hours on the train.

Mr. FIELDS. How many passengers will this large one carry?

Col. HENSLEY. That is a war plane?

Mr. FIELDS. How many people?

Col. HENSLEY. They claim it will carry 25.

Mr. FIELDS. How many on the last one?

Col. HENSLEY. That is a 28-passenger plane.

Mr. FIELDS. This large one will float on the water?

Col. HENSLEY. Yes, sir; that is what the boat is for. Those are purely all-metal planes, and imagine what chance one of our planes would have against one of these.

The CHAIRMAN. What other country of the world is using all metal for the construction of its planes?

Col. HENSLEY. None, so far, except England is going to it. They have not produced any, but they have under contract two all-metal planes of 50 deadweight tons. That is 100,000 pounds. They are under contract by the air ministry, and it is said in the official report

if these were to be constructed of wood they would carry nothing, but being constructed of metal they can carry 40 tons. That sounds rather fishy, but for the same strength in metal you can build a metal plane having eight-tenths of the weight of a wooden and fabric plane. There are a number of reasons why the fabric and wooden plane should be scrapped so far as we are concerned. We can not do it suddenly; we must lead up to it gradually; we have to work into it.

The CHAIRMAN. Do you know what metals are used in the construction of those planes?

Col. HENSLEY. Yes, sir. We have it in this country—duralumin. It is an alloy of aluminum. I was talking with the representative of the American Aluminum Co., which has the rights to the German process in this country, and he told me they could build better metal in this country than the Germans can. That is something the English can not do.

That takes up just in a general way the heavier than air. The lighter than air, of course, no other country in the world but the Germans can build. I will start off with the statement that the ship that the Navy is purchasing in England is absolutely obsolete. I saw that ship in August of last year, and it had then been under construction about six or eight months. It will be another year before it is finished. It is patterned after the L-33, which was brought down near Colchester, England, in 1916, that was built at the Zeppelin works in 1915, so that you can see what ship the Navy is getting from England. We are not progressing a single bit in the way of lighter than air.

I flew approximately 7,000 miles in this German commercial Zeppelin while I was there. Here is a picture of it. In Germany they have carried 150,000 passengers in airships without injuring or killing a single one. You can not point to any other means of transportation where they have carried 150,000 passengers without killing or injuring a single one. That ship flies every day, in all kinds of weather, except when there is a strong cross-hangar wind; when the wind gets more than 25 miles an hour, they can not take it out. But I rode in that ship in snow, in fog, and in rain, and in weather that was absolutely prohibitive to any other type of craft. And each time it landed not more than 15 or 20 minutes late.

The CHAIRMAN. Was that the line that starts at a little place outside Baden-Baden, called Oos?

Col. HENSLEY. No, sir.

The CHAIRMAN. And runs out along the Rhine as far as Mannheim?

Col. HENSLEY. No, sir. This runs from Friedrichshafen, just across Lake Constance from the Swiss border, up to Berlin. They have put on a second one beginning this month, running to Stockholm, Sweden.

Mr. FIELDS. How long can this ship stay in the air?

Col. HENSLEY. It depends on the wind. I have made the trip in three hours and forty-five minutes, and then it has taken six hours and a half.

Mr. FIELDS. How long can it stay up?

Col. HENSLEY. Sixteen hours. She carries gasoline for 16 hours.

The CHAIRMAN. Has France made any development in flying?

Col. HENSLEY. Only what she got as spoils of war from the Germans. They get the L-72. And that brings me to the point that that ship was a ship built and constructed for bombing New York City. It was ready at the date the armistice was signed, and here is the report that I made, carrying the photographs of the ship—the only photographs, I think, that have ever been made of it. When I found out it had been especially designed and constructed for bombing New York City, I looked up the pilot and got from him the story. And if you could hear the story as he told it, you would not talk of our splendid isolation and complete immunity from attack. He theoretically made 367 voyages to New York City on weather charts. He got the combined weather charts of the German admiralty, the German merchant marine, and the Danish marine. These gave for each hour of the day and each square mile of the North Atlantic the weather, and 367 times he made that trip by those charts and 367 times he reached New York City—not once did he fail. He carried 5 tons of bombs. And you know what we had at New York—absolutely nothing. No aircraft defenses; no aeroplane that carried a machine gun and, if it did, could not go up over 8,000 feet. Just so he kept out of the range of the policeman's revolver somewhere on Broadway, he could come down and rake New York City.

The CHAIRMAN. You say he made how many hundred trips?

Col. HENSLEY. Three hundred and sixty-seven times did he make that trip on the charts. He would leave Nordholz at a certain hour, and then fly right through wind and weather. Not once did he fail to reach there and return.

The CHAIRMAN. He was simply making a theoretical trip?

Col. HENSLEY. Yes, sir.

Mr. GREENE. That was simply a voyage on paper?

Col. HENSLEY. That is all it was.

The CHAIRMAN. He never made the physical voyage?

Col. HENSLEY. No, sir. However the physical voyage would have been made within 10 days if the armistice had not been signed.

Mr. GREENE. He was reckoning on the same things for the air that the mariner does for sailing—the probabilities covered by a long chart of voyages?

Col. HENSLEY. Yes, sir; absolutely.

The CHAIRMAN. Would the gas last?

Col. HENSLEY. Yes, sir. They are burning gasoline all the time; so when the lift becomes less the load becomes less, due to the loss of fuel.

The CHAIRMAN. But the dirigible body would have to be filled with gas?

Col. HENSLEY. Not necessarily; no, sir; as long as one has enough gas to keep it up. The R-34 when it got over here had lost a large quantity of gas—about one-half of it.

The CHAIRMAN. How high would such a ship or dirigible fly?

Col. HENSLEY. They bombed London at an average of 20,000 feet during the war.

The CHAIRMAN. During your investigation in Germany were you able to get any approximation of the number of dirigibles of the Zeppelin type they lost?

Col. HENSLEY. No, sir. But that is all on record. I know they were turning out a big one like this one every two weeks and there were a few other firms in Germany who had just started to build.

Mr. FIELDS. Who has that ship now; does Germany still have it?

Col. HENSLEY. No, sir; that goes to the French.

The CHAIRMAN. What is the cost in Germany of one of those dirigibles?

Col. HENSLEY. During the war, 3,000,000 marks.

The CHAIRMAN. What is the material?

Col. HENSLEY. Of the airship?

The CHAIRMAN. Yes.

Col. HENSLEY. The same as the aeroplane. Duralumin. The envelope on the outside is cotton.

The CHAIRMAN. I suppose the cotton is treated chemically?

Col. HENSLEY. Yes, sir; it is doped with what is known as cellon (?) a fireproof and waterproof dope that seems to answer the purpose very well. In every way these ships are much superior to anything that has ever been produced. We could have purchased one some months ago for \$120,000, which I considered quite a bargain.

Mr. FIELDS. \$120,000, you say?

Col. HENSLEY. Yes, sir; that is what it came to then. The option now reads for \$700,000. They would have lost considerable money. I think for \$1,000,000 we could lay that ship down in the United States and have a passenger and mail carrying ship, carrying 40 tons of mail from San Francisco to New York in 20 hours. That would be \$75,000 at the prevailing rate of postage, which is 6 cents an ounce.

We put the purchase of this ship on the ground that we desire to develop aviation commercially. The Navy say that they do not care to have anything to do with commercial aviation. The first cablegram I sent was based purely on commercial grounds, because that is the only way to train our pilots and crews and still not be a great financial burden to the country. The Zeppelin pilots say their failure was due to having to use untrained personnel. They became lost at 20,000 feet, due to faulty navigation and could not get back to Germany. Every one of them with whom I talked say this.

The CHAIRMAN. If the committee were to decide to write in a proviso that \$1,000,000 of the appropriation was to be expended for the purchase of an airship of the dimensions that are described in this contract, do you think the Government would gain sufficient knowledge and experience as the result of such a purchase so that the expenditure of the money could be defended anywhere?

Col. HENSLEY. There is absolutely no question about that, sir. There is the only ship that can be obtained for the next 10 years that will come anywhere near being a modern ship. The Navy can develop and develop from the ships they have for 10 years and they can't develop anything to compare with this.

Mr. GREENE. But you would have to have more explicit authority than that?

Col. HENSLEY. I believe the operation of this ship could be made to show a profit.

Mr. FIELDS. How long will the option run?

Col. HENSLEY. Until July 1, 1920.

Mr. FIELDS. Do you think it will absolutely operate from New York to San Francisco and carry this amount of stuff you have mentioned?

Col. HENSLEY. Yes, sir; it states as much in the contract. The specifications read it shall do that, and if not there is a penalty.

Mr. McKENZIE. Is this contract made with the German Government or the French Government?

Col. HENSLEY. It is made with the Zeppelin Corporation, the only builders of airships in the world.

The CHAIRMAN. I doubt if we can legally contract with that company at this time, they being enemy aliens and the war not having been ended up to the present time, so far as we are concerned.

Mr. GREENE. Would not it be held that the same authority that declared war could declare us able to contract with somebody?

The CHAIRMAN. That is a question of international law I do not want to give a curbstone opinion on. [Laughter.]

Is there anything further, Colonel?

Col. HENSLEY. No, sir.

The CHAIRMAN. We are very much obliged to you. This has been an exceedingly interesting hearing, and I am sure every member of the committee is thankful to you gentlemen for having given us this information. It will help us materially in the consideration of our appropriation.

Gen. Lord, are you ready to proceed with some other branch?

Gen. MENOHER. There is just one point I wish to mention. We have at present 1,348 officers, and the bill, that has passed the House already, provides for only 166 more officers. Gen. Mitchell pointed out how short of officers we are in air squadrons and air pilots. That is not going to help out very much, 160. It will some, and we hope to employ reserve officers; but we have to employ 500 reserve officers this year to fill up the quota, and we do not have the money; and unless Gen. Lord provides the money for us we won't be able to employ those extra reserve officers.

The CHAIRMAN. I remember very vividly Gen. Mitchell's explanation on that matter when he appeared before the committee in connection with appropriations for aviation for the current year.

Gen. MENOHER. That employment of reserve officers is going to solve our officer problem, but we want the money to pay our reserve officers.

SIGNAL CORPS.

Gen. LORD. The Signal Corps is ready to be heard, and I wish to make the same statement relative to the presentation of their estimates, that they are authorized by the Secretary of War to support the total amount carried in the bill before you, but that being subject to revision by the Secretary of War when he has finally had opportunity to pass upon the submission to him. And I will inform the committee and introduce in the record whatever the Secretary's decision may be.

The CHAIRMAN. I believe the items for the Signal Corps are found on page 7 of the tentative draft of the bill?

Gen. LORD. I will also state, Mr. Chairman, in this preliminary that in the current law there is a provision for commercial telephone service at Coast Artillery posts—for providing commercial telephone

service for official purposes at Coast Artillery posts. Ten thousand dollars was appropriated this present year. That estimate is eliminated from this bill, and I understand the amount is provided for in the general appropriation for the Signal Corps service.

The CHAIRMAN. That is included in the total?

Gen. LORD. Yes.

The CHAIRMAN. Capt. Albro, we will be glad to hear what you have to say upon this estimate.

STATEMENT OF CAPT. A. BLISS ALBRO.

Capt. ALBRO. Mr. Chairman and members of the committee, on behalf of the Chief Signal Officer, I wish to say, before I start my defense of our request for the ensuing fiscal year, that we are bringing before the committee this time a rather different Signal Corps than was presented to it before the war; that the activities of the corps have gradually enlarged; that the material which the Signal Corps supplies has multiplied in value. As to what we have supplied from amounts produced during the war, I will show you that in detail as the various parts of our estimates are reached. In addition to that, I wish to invite the committee's attention most carefully to the fact that the telephone service of the entire Army, with the exception of that rendered within the District of Columbia, is paid for now out of the Signal Corps appropriations, and prior to the war it was not. That constitutes, in our present estimate, more than 33½ per cent of the total asked for.

Mr. McKENZIE. Over \$2,000,000?

Capt. ALBRO. Yes, sir.

The CHAIRMAN. That is two-thirds of the total amount we allowed you last year.

Capt. ALBRO. Yes, sir. I will cover that point when I reach it, Mr. Kahn. The fact is, we had to ask for a deficiency this year on that very point. To be exact, for next year we are asking for \$2,407,850.75, the base figures for telephone service. At the present rate, with a deficiency staring us in the face, that is the amount we need for commercial telephones and maintenance out of \$6,886,000.

The first point in connection with the bill, Mr. Chairman, is that in the draft presented for inclusion in the Book of Estimates, but which was omitted in the printing of the bill in the Book of Estimates, and which item was provided for in the deficiency act approved March 6, the Signal Corps desires to have this language inserted in line 23, page 8, after the semicolon, following the word "purposes"—

tuition, laboratory fees, and so forth, for Signal Corps officers detailed to civilian technical schools for the purpose of pursuing a technical course in instruction along Signal Corps lines.

That has been included in the second deficiency act of this year, to care for officers detailed under the orders of the Secretary of War. Otherwise we can not pay for it.

The CHAIRMAN. How much money is involved in that item?

Capt. ALBRO. This year \$185 per officer, and we were entitled to 12 officers, but could only spare 7 for the detail.

The CHAIRMAN. Is that the only deficiency?

Capt. ALBRO. No; there was the big deficiency. We need this language in the bill for next year so that we can legally pay these charges.

The CHAIRMAN. How much was the total deficiency?

Capt. ALBRO. \$300,000 Signal Service, Army; \$95,000 Alaskan cable.

The CHAIRMAN. \$395,000 practically?

Capt. ALBRO. The Signal Service for the Army for the purposes of handling the funds, allocating of the funds, and setting up our reserves on the books of the finance service under Gen. Lord, has divided it, for our own convenience, into 12 classifications. Each one of these classifications I will take up now.

The first is for salaries of civilian employees in the service at large. Remembering that the Signal Corps has had to ask for a deficiency this year, that it has cut everything to the bone, that our department signal officers are saying they do not know how they can get along, that they are falling behind in their work, I have taken their pay rolls for the fourth quarter of the current fiscal year, without any increase whatsoever, and added them together. I have taken our pay roll at our only depot we now have, a radio depot at Fort Wood; I have taken our pay roll in the Philippines, the Canal Zone, Hawaii, and at Fort Leavenworth, a small pay roll, but I want to include it, and our pay roll in the service at large, the people under which are engaged in the manufacture and sale of still and motion pictures of the war to the public at large, and the preparation of films for training purposes, recruiting purposes, propaganda purposes, vocational purposes, etc.—added those present pay rolls together and taken them as my estimate for next year, thinking that was a fair basis. We have been facing a deficiency and this year have cut to the limit, but we would try to get along on that basis next year. That total of the present pay rolls is \$661,003.61.

The CHAIRMAN. And part of that, as I understand you, is returned to the Signal Corps as the result of the sales of pictures of the war to soldiers and their relatives?

Capt. ALBRO. Mr. Chairman, during the current fiscal year to date, we have covered back into the Treasury, from the sale of still and motion pictures to civilians, something like \$60,000 under miscellaneous receipts, which does not benefit us at all. If we should get the returns from the sales of films and the sales of pictures to the other corps that we furnish, it would be self-supporting; but you can not furnish one bureau with \$100,000 worth of motion pictures and other bureaus in proportion and make any money or break even.

The CHAIRMAN. To what extent is this practice of furnishing other bureaus with motion pictures conducted at the present time?

Capt. ALBRO. All training of the soldier films, all films for vocational training, all films for recruiting and propaganda purposes are furnished on orders of The Adjutant General, without any reimbursement whatsoever.

The CHAIRMAN. That is propaganda not alone for the Army but for the other departments of the Government?

Capt. ALBRO. As to that, I do not know. We do not know what they are used for after they are turned over to The Adjutant General.

The CHAIRMAN. But you presume it is all turned over for the use of the Army?

Capt. ALBRO. Yes, sir. I have not anything further to say in defense of that item, except we have absolutely reduced our civilian personnel to the minimum and if, as is contemplated in the order we understand is ready for signature, the Signal Corps takes back its supply and issue, unless the people who are paying those men in the depots at the present time give us the money, we won't have enough under this item next year.

The CHAIRMAN. How many civilians have you employed in this particular branch of your service?

Capt. ALBRO. In the supply?

The CHAIRMAN. This \$600,000 item.

Capt. ALBRO. Seven hundred and ninety-six.

The CHAIRMAN. You may proceed to the next item.

Capt. ALBRO. The second item is that of engineering and research, the development work of the Signal Corps. Colonel Mauborgne, chief of the engineering and research division, whom the committee heard on the Alaskan cable the other day, will defend that in detail; but I wish to say, first, for the committee's benefit and for Col. Mauborgne's benefit, that his estimate of \$739,000 for this item, exclusive of personnel, was cut by the Chief Signal Officer to an even half million before being put into this estimate, in order to reduce our total estimates to the allotted figure. And on that basis, Col. Mauborgne will now tell you about the engineering and research.

STATEMENT OF COL. J. O. MAUBORGNE.

Col. MAUBORGNE. Mr. Chairman and gentlemen, our research and engineering problems make it necessary for us to employ three different laboratories. You may rather wonder at such a procedure, but there are very good reasons for it.

At Little Silver, N. J., we have the radio laboratories of the Signal Corps, where development work is carried on of all radio apparatus for the Army, including the Air Service. You are probably aware that the reason for establishing it there was that we could put up suitable buildings for flying machines. That was done at the time the Signal Corps and Air Division were one, so that we could get a place to try out the various types of radio apparatus needed on flying machines and come down on the ground and go in and make the necessary repairs or alterations and what not, and then to go and try again, etc.; and also it was desirable that we should not establish a laboratory of that size in the vicinity of Washington, or within the District of Columbia. Hence the laboratory went to Little Silver, N. J.

During the war the Little Silver laboratories employed a force of approximately 450 people. The force at Little Silver now consists of approximately 40 people. The salaries of the civilian technical and clerical force at Little Silver, N. J., now amounts to about \$65,000 a year. That is not excessive when you think of the fact that radio engineers are paid salaries of from \$2,500 to \$4,000 apiece. Of those we have not very many. We have a few men who write specifications; we have the necessary number of laboratory assistants, the necessary draftsmen for making the drawings after the specifications are written or while they are being written, and the

necessary men in the shop for producing 1 or 2 models, as we see fit, or 10 if necessary.

The CHAIRMAN. The average is about \$1,500, is it not?

Col. MAUBORGNE. The average is about \$1,500; yes, sir.

Leaving that laboratory and its work for the minute, in the District of Columbia we have always had two laboratories; one at 1710 Pennsylvania Avenue, which was known for years as the Signal Corps laboratory, and which has been there now for 11 years. It consists of a place on the ground floor where we keep the samples and models of pieces of apparatus which we desire bidders to see when they come in to bid on a certain piece of apparatus, and also a machine shop or model shop where they make a model or two models of any particular piece of research work or apparatus other than radio which happens to be developed.

In addition, we have a very small force at the Bureau of Standards so that we may get the benefits of what is being done by that institution—a force of two or three engineers, a few laboratory assistants, a draftsman, and one clerk is maintained at the bureau, so that we can secure liaison—tie up with their problems and with the developments of which they are carrying on at the Bureau of Standards in certain lines of research; our small laboratory force carrying on, meanwhile, such problems as can best be done by liaison between the Signal Corps and the Bureau of Standards. The force of people in the city of Washington at these two laboratories and in my office, the Engineering Research Division, amounts to a total of 35. I understand recently a bill has been passed, or is in good shape to pass, which limits the civilians in the city of Washington, and the effect of which is to absolutely put this laboratory and engineering force outside of Washington.

The CHAIRMAN. You mean the civilian employees?

Col. MAUBORGNE. The civilian employees. The result is that we can not function as we should function. It is absolutely essential that the Engineering and Research Division have its office in Washington, for various reasons. The supply group is here and the procurement group is here. The procurement people can not function without being in every day communication with the engineering group. Specifications must be in Washington; the drawings must be here; the models must be here; the engineers must be here to give information to those who bid.

The CHAIRMAN. Your officers who cooperate with the Bureau of Standards must be here?

Col. MAUBORGNE. Must necessarily be here. They can not be at a distance and spend car fare running back and forth. It would be a waste of money. As I understand from Capt. Albro, the situation is critical and unless some other measure is taken we are going to be in a very serious predicament in regard to those people in this city.

The CHAIRMAN. What progress has that legislation made?

Col. MAUBORGNE. Capt. Albro, what progress has the legislation made which I have mentioned?

Capt. ALBRO. The last I heard of that, Mr. Kahn, was from Senator Warren's secretary to the effect that the Senator was going to see me before the bill went on the floor, with the idea of introducing some amendment in that bill to protect us.

The CHAIRMAN. There is probably, then, a Senate amendment—some amendment to one of the annual appropriation bills.

Capt. ALBRO. The legislative, executive, and judicial bill. The Senator thinks he can not introduce the amendment.

Mr. FIELDS. Why can not the Senator introduce the amendment?

Capt. ALBRO. He turned it down in the committee and he introduced the bill.

Col. MAUBORGNE. At any rate, the salaries of my engineering force, and it is about as small as I can possibly cut it, now amount to about \$125,000 a year.

Capt. ALBRO. That is what we have allowed you for next year, just exactly your present salary list.

Col. MAUBORGNE. The research problems of the Signal Corps are many. The war brought us face to face with scientific developments of which we must take cognizance and must progress as fast as the other nations. Radio particularly has made important strides. During the war, from lack of equipment on hand in the American Army, it became necessary for Gen. Russell, chief of the Signal Corps of the American Expeditionary Forces, to purchase from France virtually all radio equipment used by the American Army in France. The result was we had on hand at the close of the war a lot of French radio apparatus which it became necessary for us to dispose of to the French, because the upkeep of the apparatus in the nature of vacuum tubes, such as these tubes in this radio set here, would not be possible in this country. First of all, their vacuum tubes are inferior and we had developed during the war a decidedly superior article in these tubes here. [Exhibiting tubes to committee.] Hence it would have been inadvisable to have taken that French stuff and brought it home with the expectation of using it in the Army. The result was Gen. Russell disposed of a great deal of it for about 80 or 85 per cent of what it cost originally.

The CHAIRMAN. I think he did very well.

Col. MAUBORGNE. He did very well, Mr. Chairman.

Capt. ALBRO. I might say at this point, that the average return on the Signal Corps property over in France was higher than any other branch of the service.

Col. MAUBORGNE. He obtained very good value. The situation results in the present shortage of radio apparatus. The Signal Corps, during the war, developed certain types of apparatus of which the radio telephone is one and these tubes are another, and it now becomes necessary for us to outfit the American Army with American radio. Of course, some of it has already been contracted for—sets we developed during the war—and the money is obligated and is already voted by Congress. Certain sets in the definite program for just the radio alone, have not been finished. The development is not complete. A year ago I spoke before this committee about a loop set for tying together the advancing infantry and supporting artillery.

That loop set went to France for test. The comment was we did not make its power great enough to completely cover the barrage range of the Artillery; if the Infantry advanced beyond a certain limit, the Artillery would be out of touch with them. During the war the Infantry and Artillery had no satisfactory means of communication at that critical stage of the game. No matter how well the

barrage was planned, by which the Infantry was to advance so many yards and reach a certain point at a certain time, and the Artillery putting a barrage in front of them, and so forth, the plans all failed and the Artillery had to stop firing because they did not know where the Infantry was. Telephone lines could not be kept up in the greatest number of cases on account of the shells falling around our own troops.

The CHAIRMAN. Were there many casualties among our own troops on account of the failure in that direction?

Col. MAUBORGNE. I am not informed on that, as to the number of casualties. Certainly our own guns fired into our own troops on many occasions.

The CHAIRMAN. Because—

Col. MAUBORGNE. Of the failure of communication from the front lines to the Artillery. That could not be foreseen. The troops can not advance as per schedule, and the obvious thing to do is to get a message back if possible to tell the Artillery to stop firing; or, if it were impossible to get a message back, if they get out of touch, the Artillery in many cases stops firing itself. That thing will be overcome by the use of this loop set. It is a radio set carried by a single man. It has no wire to be paid out on the ground, no wire on the poles to be shot down. It just has a loop of wire a meter square as an antenna. The first set was one we made, according to their specifications on the other side, having a range of 2½ miles. They said that was as far as the Infantry would get from the Artillery. As a matter of fact, we referred the matter to the General Staff and the Field Artillery Board, who said to double it, that it ought to have the range of the guns, up to 10,000 yards. So among our field problems this is one of many, and everybody who has seen that set said it was one of the best things put out in the war. There are no sets of this sort yet in the hands of troops and the general program has put it on the plan as an essential thing and we must complete it. That is one of the things for which we need money for further development.

Of the same type of research problem now before us there is another radio set for which the plan has been brought by the air division. At this point I will digress to say, of course you know we manufacture radio sets for the Coast Artillery—for the fixed defenses—for aeroplanes for corresponding with stations on the ground and for every branch of the service that uses radio—Infantry, Cavalry, and what not. During the recent operations on the border between Cavalry and aeroplanes overhead it became evident there should be some sort of horseback radio set introduced, by which a man riding on horseback would be in radio telephone conversation with an aeroplane above, so that the Cavalry could be led through the brush to whatever point necessary. That is another of our problems. There are many.

Without going through the long list of those things, in order to keep up with the advance of science, it becomes necessary for us to have the amount of money asked for in this bill.

Another very interesting thing which you did not know of, a product of the war and of which we have built no sets and which needs a little more development work, is what is called black-light signaling. We have a device, to show you its use, by which the light emitted from a lamp covered by a screen which is so deep red you

can not see it a foot away can be reflected by a mirror at one end, let us say, of a building, and again by another mirror at the next corner and another mirror there and another there—one on each corner of the building—thus sending the black-light beam around the building. It is absolutely black; you can not see it. But if anybody should pass through that beam of light, a signal would be recorded in the ears of the man listening at the listening device.

The advantages of that scheme are obvious. You can block a harbor for the Coast Artillery perfectly by putting that beam of light at night from one part of a projection to another and no boat can go through that beam without ringing a bell or giving an audible signal. And it can also be used as a secret means of signaling from the front to the rear trenches for the Infantry.

The set is a completely finished device, but some further development work is necessary. The Bureau of Standards has done certain work on the crystals to do this same thing. The inventor of the original crystal has produced two very fine sets, but they are not quite satisfactory, so we need money for further development.

These illustrations are given simply to show the lines we are working on. We have the telephone problem, the telegraph problem, and then we are just on the eve of the announcement of a very important discovery which we are not even able to make announcement of here at the present time. It is essentially a Signal Corps problem, in a way related to Gen. Squier's former invention of wired wireless. And this invention will be taken hold of by all nations of the world; will greatly increase the cable facilities of the world and give us an epoch-making invention. This is an invention of the Chief Signal Officer himself, who, as you know, is a very high-grade scientific man. He is having this work carried on under his own direction.

These experiments all cost money and we simply want to get your backing to enable us to proceed and to carry out the various problems of which I can not enter into a discussion at this time.

Capt. ALBRO. I might say, with regard to the last statement of Col. Mauborgne, that I talked with the Chief Signal Officer personally on this subject just before I came up here, and I think I am safe in saying that the discovery to which Col. Mauborgne has referred will increase the efficiency of certain of the facilities of the world from 40 to 60 per cent and save the world, annually, ten times the present Army bill.

The CHAIRMAN. It is a consummation devoutly to be wished.

(Thereupon the subcommittee adjourned until to-morrow, Wednesday, March 31, 1920, at 10 o'clock a. m.)

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Wednesday, March 31, 1920.

The subcommittee met at 10 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. Colonel, when we adjourned yesterday afternoon you were explaining the radio net, the radio betterments that the Signal Corps has been working on, and the amount of money you desire for conducting that work. Will you kindly proceed with your explanation?

STATEMENTS OF COL. J. O. MAUBORGNE, CAPT. A. BLISS ALBRO, CAPT. WYATT G. FRANKS, SIGNAL CORPS, AND MAJ. K. C. MASTELLER, GENERAL STAFF CORPS.

Col. MAUBORGNE. Mr. Chairman, the purpose of introducing at this point a radio net showing all the radio activities of the Army in the field is to bring to the attention of the committee the need for the development of certain radio sets which do not now exist or which are just in their inception. The net as presented is the revised net, which is the result of our operations in France. It indicates not only the radio which was used in France but those proposed which have become necessary due to the change in the conditions which the Army must meet if it faces an enemy on American soil or nearby soil. In other words, it introduces the radio of such a unit as a Cavalry regiment, which, as such, was not tied to the divisions in France. During the war there was no such thing as a Cavalry regiment, functioning as cavalry, spread out over great distances in the field.

In the future operations in the United States or in nearby territory it will be essential that the Cavalry operate over great distances. Hence this Cavalry can not be tied up by wire to the Infantry which follows it, but it must be connected by radio, and in any future operations we know of in this country the condition is going to be entirely different from what it was in France, where the radio sets necessarily had to be limited in power because of the small amount of territory occupied by our forces and the number of sets to be worked in a given area. This condition will not obtain in the future. The distribution of troops will be great. Small columns will operate—perhaps a column in the nature of an independent Infantry brigade preceded by Cavalry will be the ideal organization for certain operations which may occur in the future.

That means that as the Cavalry had no radio sets in France it becomes necessary to develop a set of that kind, and as a matter of fact the development of this particular set is well under way. As soon as the war closed we started the development of a cavalry pack set, which will have from 60 to 100 miles radius. The work on that set has reached such a stage that we feel satisfied we have arrived at a solution. We asked in the original estimate this year for funds for further work on that subject. That estimate has been cut by our own people to about one-third, and of that amount we want about \$2,000 for the development of a gas-driven generator which will take from the men the burden of turning cranks. The electricity is now generated by men turning a crank, and we believe it will be far better if we have a gasoline engine to drive the dynamo. You can not carry gasoline very well with the Cavalry, and we want to have that gas-driven generator as an auxiliary where it can be used. With the Cavalry we must depend upon man power principally because that is always there. So we are asking for the sum of \$2,000 for that set.

At this point I should like to bring to the attention of the committee certain questions which have been raised as to why the Signal Corps should run and maintain the control of its own development and research group, or why we should not put this research work in the hands of very competent civil engineers in civil life.

There are two objections to that latter plan. In the first place, research as carried on by outside corporations has cost us during the war, when we could not do it ourselves, from four to five times the amount of money it will cost the Government to do the research work itself. In the second place, and principally the radio engineers in civil life are not familiar with Army field requirements. They can not foresee what we actually see in our own practice. They could not foresee, for instance, what actually happened, that we had to have a set put on a mule, and that at the psychological moment the mule kicked up his heels and the set went 30 feet through the air, and still it was picked up and put to work. The Army must have a type of apparatus which must have enormous strength, and every part of the set must be made with that end in view. Engineers in civil life are not capable of designing that kind of set.

We tried that out during the war and the result was that radio sets designed in civilian laboratories were not in shape to work by the time they got to France. Moreover, in order to have that apparatus suitable for working under field conditions engineers and officers all must know and be familiar with the conditions. Hence we have an interchange of officers constantly from the field to the research laboratories and back again, and before any set is finally decided upon we always "try it out on the mule." Take, for instance, this particular set, cavalry pack set, which I have mentioned. This set has been thrown out of a window and dropped about 20 feet to the ground. But even that does not put it out of commission, and we can go ahead and use it. After such a test we know that we have a set which we know is going to stand the gaff because it has been put through the kind of test it will meet in service, and now we send it out to the field. So much for the fact that the engineers on the outside can not handle the research work that is peculiar to the Signal Corps.

That applies to all our apparatus, whether telegraph, telephone, radio, or visuals. Outside engineers can not foresee the weather conditions we are going to meet and the situations we will have to face. They are not generally engaged in making that kind of apparatus, hence they are not familiar with those things. It may be that in the field we will encounter a situation where a truck may be stuck in the mud and perhaps the soldiers will take the entire contents of the truck and throw them into the road or field; they may throw one of the radio sets which may be in the truck out into the water. Then it comes out of the water and it must work without failure immediately. That kind of apparatus is not designed by the civilian engineers.

I explained yesterday that we sold a majority of the French radio equipment back to France because of the fact that we could not keep it up in this country, because we should be obliged to get replacements from France, which would obviously be a mistake. So we have designed our own corresponding apparatus, and there is still under way considerable design and research work in connection with a set for brigade headquarters as well as for other places. For the design of the brigade set we have asked \$5,000 for this year. That is not a large amount.

Now then, the various division headquarters in any plan such as we would have to operate under in this country would probably be separated by a good many miles instead of by small distances as in France. So we are at work on the design of a tractor set, and there

are modifications needed in that design which will cost some money, which we estimated to be about \$10,000. I believe that estimate has been cut to \$6,000. This will give us a set capable of being used as a radio, telephone, or telegraph set, the telephone feature working about 200 miles and the radio telegraph working from 500 to 600 miles. In other words, the commanding general will be able to use whichever he wants, either the radio telegraph or the radio telephone.

The CHAIRMAN. Will you be able to extend the radio telephone to a distance of 200 miles?

Col. MAUBORGNE. Yes, sir; it is done now without question.

The CHAIRMAN. As I understand it, that will work successfully in a condition of war, with the cannon on both sides blazing away and the Infantry musketry going on at the same time?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. And that noise will not interfere with the sound waves at all?

Col. MAUBORGNE. No, sir. The only protection one needs is the protection from sounds in his own immediate vicinity. That is to say, so far as the receivers are concerned, instead of having the type of receiver such as we have here we put over every set a pair of rubber cushions which completely surround the operator's ears and hence cut out all wind sounds or sounds of the artillery. We have the same proposition when we put the radio telephone into an airplane.

Mr. CALDWELL. The difference is that the sound of the cannon or the outside sound is the sound that comes by reason of the vibrations of the air, and the sounds that we get here are due to the electrical vibrations that come in on the wire?

Col. MAUBORGNE. Yes, sir.

Mr. Caldwell. So there are two distinct sounds which come through distinct mediums, and one does not interfere with the other, except where the vibration through the air interferes with the nervous system of the body from which you detect the sound, and whenever you can get your body protected so that the waves of the atmosphere do not disturb the nervous system of the body you can hear the sound created over the wire by the electrical apparatus as sound which passes between the electrical apparatus and your ear.

Col. MAUBORGNE. Yes, sir. There is one thing to be added, and that is that at the end where the fellow is doing the talking, any sound in that place ordinarily goes into the transmitter. You can see how that works on this machine. There is a transmitter—indicating an ordinary bell-shaped transmitter on a commercial telephone—that picks up everything going on in this room, due to the shape of the mouthpiece. To meet the situation described by Mr. Kahn, particularly in connection with the noise to be overcome by a transmitter in an airplane telephone transmitter it became necessary for us to design a transmitter such as this one which would not pick up stray sounds. The mouthpiece consist of a disc almost a quarter of an inch thick through which have been pierced a series of holes not much bigger than would be made by a needle. That is the solution for stopping the side tones; that is to say, a gun firing or an airplane motor exhausting nearby has no effect on that diaphragm, which you observe is so arranged that those sounds have no effect on it at all. Nothing reaches that diaphragm except the man's voice.

Hence all the side tones, whether from a gun fired near the instrument, or whether as in the case of an airplane the terrific discharge of the motor which exhausts into the air without a muffler, is all done away with by the functioning of that particular type of apparatus.

The CHAIRMAN. Have you been able to overcome what they call "static?"

Col. MAUBORGNE. To a certain degree we have. The advance in the art is very rapid in that respect. We have in some of our sets devices for more or less eliminating the static, which depend upon the principle that you can tune a part of a set to work at one given frequency and eliminate practically everything else. It is something akin to the principle of the vibrating reed which you can tune to a given frequency. Such rod or string will only be started by one very sharply defined and marked frequency. The result of our arrangements is that we can overcome the static to a great degree, but we have not yet entirely eliminated it.

The CHAIRMAN. That, of course, was one of the great drawbacks in the matter of radiotelephone operations.

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. I talked into a radiotelephone in San Francisco and heard a band of music playing at Fort Myer, located near those big masts over there. But every once and a while the buzz of the static would cut off that sound.

Col. MAUBORGNE. That is very true, and there are times when the radio is still subject to that interference. Of course, you understand, Mr. Kahn, that wherever in the field of operations we can use land lines—telephone lines—we do it. The average American has been trained from boyhood to have a telephone at his elbow. He wants it on the battle field, and he can not get along without it. When all these chaps who came from civil life into the Army got into France, they said: "Where is my telephone?" It means that the Signal Corps had to make every possible effort to get the telephone lines established. Also, unless we do use wire lines where practicable, there will be such a condition in the air due to the use of radio that communication will suffer.

Of course, there are certain units which can not be connected by wire for obvious reasons. The plane in the air must necessarily depend entirely upon radio for its communication with the Artillery, or with Infantry. So, as far as practicable, we try to give preference to the radio work, which must necessarily go on between units which have no other means of communication. When the Infantry goes over the top, as a rule, all wire lines are shot away; the Infantry can not use the lamp signalling, and we can not use any radio, which requires long antennae, because the long antennae will be shot away too, and hence we have to use small sets with a loop antennae.

Mr. GREENE. Has anything developed from the promises that we have heard made in connection with the underground antennae?

Col. MAUBORGNE. The underground antennae is a very fine thing. To show you how that works, let me say this: Static is partly due to the discharge of electricity either between cloud and cloud, or cloud and earth, as lightning, as we know it, or by the difference in potential which exists between the clouds and the earth underneath. If any conductor touches two oppositely charged bodies, as for example, an antennae wire, a stream of electricity runs down that wire

and so clouds passing over a radio station have the same effect as if the wires from the ground up to the top of the mast were to tie these together, and you get the rumble of electricity down there in the set, which interferes with the radio message.

In Texas, we experienced great difficulty with sand storms. Pieces of sand rubbed together, or on other bodies, produced charges of electricity, and that charged sand blown across an antennae brings down a tremendous amount of static into the radio set. So, in the case of smoke from a battleship, carbon particles coming up from the funnel bear charges of static electricity which interfere with the radio aboard. Hence, the Navy is bothered by static of its own manufacture.

Mr. GREENE. It also has a military advantage in being invisible.

Col. MAUBORGNE. And the other military advantage that we are making use of now in the army radio stations, is that by putting the antennae underground we do not get the effect of these particles of sand blowing over it. So that the underground antennae is a decided advance for certain work. Of course the Army can not stop to bury the antennae in the case of a small field set rapidly moved about on the battle field.

Mr. CALDWELL. Is it fully agreed that it is the discharge of the electricity that makes that?

Col. MAUBORGNE. That makes some of it. In the particular case mentioned it is agreed that the static is produced in the way mentioned.

Mr. CALDWELL. We have heat electricity, and there is a theory now that possibly the static is caused from the mixing of the various strata of atmosphere of different temperatures.

Col. MAUBORGNE. Undoubtedly so; there is no question about that.

Mr. CALDWELL. The idea is if we had the same kind of a storm without the sand, you would have practically the same static that you would get from the other condition.

Col. MAUBORGNE. No, because we have actually shown that we can draw large amounts of electricity across an open switch in the antennae in a sand storm or if a railroad train passing by blows its smoke on the antennae. So we must screen our antennae, if we can. The static in these cases is not the result of heat.

Mr. CALDWELL. The smoke is hot as it passes through the air, and there you get a differences in temperature. Have you made any experiments in the case of air that is screened?

Col. MAUBORGNE. I can not say that we have.

Mr. CALDWELL. I have for a long time thought that probably sooner or later we would be able to take electricity out of the atmosphere where we would be able to get the differences in temperature where the sun shone and where the sun did not shine, and I was asking to find out whether or not you had made any experiments along that line.

Col. MAUBORGNE. A great many experiments have been carried on in connection with research initiated by the British Institute. Dr. Eccles who was conducting the research work asked our stations in the United States to collect certain data regarding static, and we compiled very carefully the results of the static disturbances we noticed in our receiving sets. We got all the meteorological data for the vicinity of each radio station, and that showed that most of the

static is due to the local conditions at the stations—principally to local lightning storms.

Mr. CALDWELL. And the aurora borealis?

Col. MAUBORGNE. Experiments have recently been made to see what the effect from that has been; also, to learn the effect upon radio transmission of the darkening of the sun during an eclipse.

Mr. CALDWELL. And the effect of sun spots also?

Col. MAUBORGNE. We have not gone so far as to consider sun spots, but we have made a decided advance in the elimination of static. One of the devices, for example, is the use of the small loop antennæ, capable of being used indoors. I think you all probably have seen on display in this building a receiving device using a single coil of wire as an antenna. Such antenna is necessarily free from a great many of these static disturbances, because you can readily screen it from sand storms and changes in light and other things. We have made advances, but we have not yet completely solved the problem.

At these different headquarters of units in the field a number of sets must be employed. Take, for instance, at the regimental headquarters of the Artillery; it is necessary to have radio communication from regimental headquarters to the various battalions, and that takes one kind of a set. Then, again, the Artillery must also communicate with the Infantry in front of it, and that takes another kind of a set. They must look out for the signals from the airplanes, and that takes still another kind of a set. Finally, with so many sets we have to develop some sort of a radio trailer in which those different sets can be carried. Unless transportation of this kind be provided, we will repeat the heartrending experience of France, where no wheel transport was provided for this radio, and the sets had to be carried by hand. After the men took a radio set under their arms and hiked 3 or 4 miles through the mud sometimes the set was all there and sometimes it was not. So our estimate contains a certain amount of money, \$5,000, for the development of the necessary radio trailers, which can be towed behind an automobile, or to which we can attach horses and pull it wherever we want it to go.

Mr. CALDWELL. \$5,000 for a trailer?

Col. MAUBORGNE. \$5,000 for the development of a model.

Mr. CALDWELL. How many will you make?

Col. MAUBORGNE. We will not develop more than one, probably. We would use such a trailer as an operating station for one of the sets and put the other sets on the outside some place. That outfit will provide special protection against the acid from the storage batteries to prevent the eating up of the floor. That kind of thing will cost, for an experimental model, \$5,000. I am talking now purely of research problems.

The CHAIRMAN. Many of these problems have been developed because of the experience you had during the war?

Col. MAUBORGNE. Absolutely all of them.

The CHAIRMAN. That is because of your experience on the other side, which seemed to make this sort of thing absolutely necessary?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. And you want to have these devices in case we get into another disturbance?

Col. MAUBORGNE. That is particularly true in connection with the need for a particular kind of radio set which can be carried on the back of an infantryman.

The CHAIRMAN. So all this money you are speaking about now is in connection with experimentation?

Col. MAUBORGNE. In connection with research work and experimental work alone. We have also included in this \$500,000 an appropriation for development and research work for the Air Service. I have not yet touched the subject of apparatus for airplanes. They find need of a 100-mile communication between the planes which go out and the railroad artillery. Those guns shoot so far that there would be no sense in giving such a plane a set capable of communicating over a distance of only 10 or 15 miles, as is the case with the radio-telephone set in this room. They must have long-range communication, and hence it takes a different type of set which is not yet in existence.

The CHAIRMAN. I would suggest that you put into the hearing the details of this sum you want to expend, and just confine yourself now to the general proposition.

Col. MAUBORGNE. Very well. I shall be glad to have this data prepared and put into the notes at the proper place.

Estimate for the engineering and research work of the Signal Corps, covering the item of \$500,000 for the fiscal year ending June 30, 1921.

The total of \$500,000 is made up as follows:

ENGINEERING AND RESEARCH WORK OTHER THAN RADIO.

- | | |
|--|----------|
| 1. For the purchase of precision instruments, machine and hand tools, wire, brass, steel, insulating materials, etc., electric power and gas used in the construction of models, in research work, and in the testing of equipment at the Signal Corps Laboratory, 1710 Pennsylvania Avenue NW., Washington, D. C..... | \$15,000 |
| 2. For the redesign and improvement of equipment now in use, and the development of new equipment other than radio, a total of..... | 75,000 |

Made up as follows:

- | | |
|--|---------|
| 1. Development of balloon telephone set, including redesign of winch..... | \$2,500 |
| 2. Development of improved model of field telephone..... | 2,500 |
| 3. Development of gas mask transmitter..... | 1,500 |
| 4. Development of trench signaling lamps other than those involving radio devices..... | 5,000 |
| 5. Development of multiple field switchboard..... | 5,000 |
| 6. Development of hand wire cart suitable for packing..... | 1,500 |
| 7. Development of light type of outpost wire..... | 5,000 |
| 8. Development of cipher devices other than machine ciphers..... | 2,000 |
| 9. Development of pocket flash lamp..... | 500 |
| 10. Development of various mechanical devices in connection with motion-picture cameras..... | 2,500 |
| 11. Development of simplex telegraph set..... | 1,000 |
| 12. Development of universal test set..... | 1,000 |
| 13. Development of mechanical cipher machines, suitable for rapid telegraphy, cable, and radio purposes..... | 37,500 |
| 14. Development and test of Sine wave telegraph system..... | 2,500 |
| 15. Development of secret telephone and telegraph systems.. | 5,000 |

Total for the work of the electrical engineering section.. 90,000

LAND RADIO RESEARCH.

For the purchase of such materials, tools, supplies, including engineering services, which can not be provided by the Military Establishment, and which have to be secured from outside agencies, and for the purchase of materials, tools, supplies, and incidental expenses involved in the development, design, and construction of experimental models in the various radio laboratories of the Signal Corps, for units of the Army other than Air Service, a total of.....

\$212,000

The following is an estimate of the development to come under this total in detailed form:

1. Development of suitable engine-driven generator for use with the Cavalry pack set.....	\$4,000
2. Development of amplifier and separate heterodyne for 200-mile tractor sets.....	2,000
3. Development of radio operating trailer.....	5,000
4. Development of storage battery trailer.....	2,000
5. Development of infantry-artillery loop sets using dry batteries.....	2,000
6. Development of two-way telephone loop sets.....	4,000
7. Development of new types of audio and radio frequency amplifiers.....	2,000
8. Development of call systems for radio telephone and telegraph sets.....	1,000
9. Development of submarine, subterranean, and other wired wireless.....	10,000
10. Development of standard storage batteries for field use....	2,000
11. Development of dry batteries for radio sets.....	1,000
12. Development and testing of battery charging sets.....	10,000
13. For special research problems in radio intercommunication, submarine, and other forms of communication for which the Bureau of Standards already has competent specialists, and on which problems it would not be profitable for the Signal Corps to employ like specialists (this money to be expended by the Bureau of Standards on Signal Corps problems).....	50,000
14. Development of special vacuum tubes for transmitting and receiving.....	10,000
15. Development of tube transmitters for transports, mine planters, other vessels and shore stations.....	15,000
16. Development of direction finders for use on land.....	3,000
17. Development of static eliminating device.....	5,000
18. Development of radio telephone set for use of Field Artillery for fire control.....	5,000
19. Investigation of various methods of telephonic modulation, including comparison of method of power modulation with that as used in the constant frequency system.....	1,500
20. Research on high-power transmitting tubes and circuits, and methods for obtaining high potentials.....	5,000
21. Special laboratory apparatus and miscellaneous material and equipment required for testing and construction....	12,500
22. Development of infra-red and ultra-violet signaling devices using vacuum tubes for reception.....	5,000
23. Development of portable constant frequency regimental to brigade telegraph set.....	2,000
24. Development of radio receiving set to be operated on horseback while in motion.....	1,000
25. Development of pack radio telephone set.....	1,000
26. Development of tank radio telephone set.....	1,000
27. For incidental expenses in connection with the operation, maintenance, and betterment of the radio laboratories, Camp Alfred Vail, Little Silver, N. J.....	50,000

AIR RADIO RESEARCH.

For the purchase of such material, tools, supplies, and engineering services as can not be provided by the Military Establishment and have to be secured from outside agencies, and for the purchase of materials, tools, and supplies, and for incidental expenses involved in the development, design, and construction of experimental models in the Signal Corps laboratories requested by the Air Service, a total of..... \$198,000

The following is an estimate of the developments to come under this total in detailed form:

1. Development of airplane radio direction finders.....	\$5,000
2. Development of methods of simultaneous sending and receiving on airplanes.....	10,000
3. Development of constant speed fans for various classes of airplanes.....	3,500
4. Development of remote control for airplane telegraph and telephone sets, both low and high power.....	10,000
5. Development of airplane receivers, including high frequency amplifier suitable for short wave lengths.....	10,000
6. Development of a method of obtaining power for generators of airplane sets direct from engine of airplane....	5,000
7. Development of sending and receiving sets using fixed antennæ so as to eliminate trailing wires.....	7,500
8. Development of high-power radio telephone and telegraph set for long-distance communication with airplanes for ground installation, as that of railway artillery.....	10,000
9. Development of high-power radio telephone and telegraph set for long-distance communication with airplanes for installation on airplanes.....	7,000
10. Development of methods to enable airplanes to locate landing field.....	10,000
11. Development of miscellaneous airplane, airship, and observation balloon radio equipment not covered by above, details to be furnished by the Air Division later..	77,000
12. Development of high-power telephone and telegraph sets for use on dirigible balloons.....	10,000
13. For incidental expenses in connection with the operation, maintenance, and betterment of the radio laboratory of the Signal Corps at McCook Field, Dayton, Ohio.....	25,000
14. Development of constant frequency radio telephone set to replace the present spark type of radio set on airplanes and improve selectivity.....	2,000
15. Development of methods for eliminating magnetic disturbances on airplanes.....	3,000
16. Design of new type of operator's helmet.....	1,000
17. Development of interphone set.....	2,000

Briefly, I will say that this development covers not only radio, which is the only net shown here, but it covers particular pieces of apparatus which have become necessary to our operations overseas, certain connections to switchboards—telephone switchboards—and many other things, which we can put into the record in detail, item by item. You will see that our total amounts to about \$500,000 for research work, \$225,000 of which is for the research work for the Air Service. We have recently established at Dayton, Ohio, at the big air laboratory, a branch of our radio laboratory. We have our engineers there and our equipment for radio work, in connection with the work they were doing in regard to the design of the plane.

During the war and prior to the war we had a hit-and-miss sort of proposition which was not a good one. The airplane was made by airplane men, and then we hung on it, like a Christmas tree, a radio set and machine guns, and other things, and when we got done there was no room for the pilot. The thing was not a design which was properly coordinated.

As it is now, they get together, a little group of experts, an ordnance man, a radio man, a meteorological man, etc., and they design the plane with the needs of all at hand and everything must fit in its proper place. So much space is allotted for the radio, so much for the armament, and the result is a design which is really well done.

I want to point out, Mr. Chairman, that regardless of the size of the Army the appropriation for research should not be cut, because it does not depend upon whether the Air Service has 40 planes or 500 planes. The problems are just the same, and the research money should be appropriated because research work must continue. Of course, so far as money for production is concerned, the amount of money estimated for so many radio sets of this kind and the other kind will depend upon the number of units of the Army allowed by the Congress.

The CHAIRMAN. As a matter of fact, these estimates you have been submitting do not really represent a complete set?

Col. MAUBORGNE. Not by any means.

The CHAIRMAN. Or any of these items?

Col. MAUBORGNE. Not by any means.

The CHAIRMAN. They are simply sets you are trying to work out?

Col. MAUBORGNE. They are models. Then we draw up specifications and drawings and hand them over to some manufacturer; and the requirements section of the Signal Corps, upon estimates based upon the actual size of the Army, determine that they will need so many sets of each kind for the Army, so many for the Reserve, and so many for the National Guard.

Mr. FIELDS. About what would a complete set cost?

Col. MAUBORGNE. It all depends upon the set. The tractor sets for use at division headquarters will cost in the neighborhood of \$8,000 apiece. The loop sets in the front lines for the infantry will cost in the neighborhood of \$200. That radio-telephone set over there cost in the neighborhood of \$800. It is simply a question of the power and size of the set.

The CHAIRMAN. After all, the nature of the country has a good deal to do with it?

Col. MAUBORGNE. It does.

Mr. CALDWELL. What amount of power does it take to operate this set here?

Col. MAUBORGNE. The output is about 5 watts. That is to say, we get that amount of power in the antenna by using as a source of power a 12-volt storage battery, which runs a dynamotor. That is a small motor-generator set out of which you get two currents—a 12-volt direct current at one end and a 300-volt direct current at the other end. The current taken out of the 300-volt end is so minute as to be scarcely perceptible. About 2.5 amperes is drawn from the 12-volt end. That is a very small set.

Mr. CALDWELL. This is both a sending and a receiving set, and the one at the other end is a similar set?

Col. MAUBORGNE. Exactly. So with the apparatus similar to that which you have here, but of higher power, you can carry on a conversation for 200 miles, but this S. C. R. 67 set will carry conversation only about 13 miles.

Mr. CALDWELL. What power would you have to have for 200 miles?

Col. MAUBORGNE. About 2 kilowatts.

Mr. CALDWELL. How does that figure in horsepower?

Col. MAUBORGNE. A horsepower is 746 watts, or about three-quarters of a kilowatt.

Capt. ALBRO. Three-quarters of a kilowatt is equal to about 1 horsepower, so 2 kilowatts would equal a little less than 3 horsepower..

Col. MAUBORGNE. In the case of all radio telephones up to the present time, when you want to talk back you have to throw a switch.

The CHAIRMAN. You press a little button and release it?

Col. MAUBORGNE. Yes, sir. We have recently done away with that by means of a remarkable invention which we are going to patent, and we will be able to have two conversations just as you have on the ordinary wire.

The CHAIRMAN. Was that invented by an Army officer, that is, the invention you have just spoken of?

Col. MAUBORGNE. Yes, sir; by an Army engineer. He is a civilian who was an officer during the war. That has been done since the war.

The CHAIRMAN. We will be glad to have you continue with your explanation, Capt. Albro.

Capt. ALBRO. The third item of the 12, into which as I stated yesterday, the Signal Corps has divided this appropriation, is the one for the Hawaiian and Philippine and miscellaneous expenses. That is simply in the nature of money allotted to the department signal officers in Hawaii and the Philippines, to handle the business there, in addition to the unit equipment and material which is bought here and sent to them. That has been constant for the past two or three years, and we are estimating that next year it will be just the same as it has been for several years. The amount of the item is \$22,000, \$5,000 for Hawaii and \$17,000 for the Philippines.

The CHAIRMAN. You are asking the same amount this year that you had last year?

Capt. ALBRO. Yes, sir. It has been constant for three years.

The next item is one into which the subject of the Army program enters to a somewhat minor degree. That is the supply of signal equipment to the Army at large and the maintenance thereof, and we are asking for that purpose \$1,873,491.69. That is based upon an Army organization of nine infantry divisions and one cavalry division, not the 16-division program nor the 20-division program.

The CHAIRMAN. That is based on the program of the organization fixed by the Army reorganization bill, which recently passed the House?

Capt. ALBRO. Yes, sir. In that connection I wish to state this, that the increase in this appropriation would only be caused by increasing the number of units or divisions. Any decrease could only be secured by decreasing the number of divisions or the number of units.

In preparing this estimate I have used the same care and have eliminated every stray item as if I were going before a board of directors, which the Signal Corps feels you gentlemen are, who are going to spend the money of the stockholders, who are the people of the United States. So, just as if I were going before the officers of a corporation, I am bringing this estimate for unit equipment before you, and the statements I make for the record are made on that basis.

The Signal Corps at the time of the armistice chopped its contracts. It did a business-like job.

We did not carry on production of old material or unit equipment which we could have done under our appropriation for the fiscal year 1919 and install a large stock in the warehouses, and we saved and turned back into the Treasury, I think, a larger proportion of our appropriation than any other branch of the service. As a result we have had on hand this year only sufficient to create what was known as a war reserve, and in the case of every single item for which something almost like it could be substituted we have given full equipment to the divisions that have been organized. We have furnished the vocational training branch over a million and a half dollars worth of Signal Corps equipment for vocational training, without the return of a cent of money. We tried to back them up as far as possible, because we realized that if those men were trained in the Signal Corps end of the game, such enlisted men would gradually drift to the Signal Corps. That puts us up against the proposition where our reserve for maintenance is practically gone, and I have figured from the maintenance material requisitioned by organizations during the current year a minimum amount of maintenance for next year, and I want to call your attention to the figures that go to make up the total.

We need for those 10 divisions, in initial equipment, \$63,820 per division. That equipment is the nervous system of those divisions. The amount stated is for new equipment that has not been developed yet. It is new equipment that is coming through, such as the radio tractor set, which has been developed practically to completion, and is now ready to go to the headquarters of the divisions so the men can be properly trained in handling the work of the division.

Mr. GREENE. Have you taken into consideration the fact that while in its letter the reorganization act, if it becomes a law, will take effect on July 1, if that happens there will be a long period in which the Army will simply be undertaking to get into gear under that act, and you are not likely to have nine divisions ready for field operations requiring this apparatus, to take their equipment?

Capt. ALBRO. In reply to that, we are equipping and maintaining seven divisions now.

Mr. GREENE. Where are these seven divisions functioning as divisions?

Capt. ALBRO. As to that, I can not state offhand. We have a list of the supplies to be furnished, but I have not the list of the stations with me.

The CHAIRMAN. Can you put that in the hearing?

Capt. ALBRO. Yes, sir.

AUGUST 26, 1919.

From: The Adjutant General of the Army.

To: The head of each bureau, operating service, or department of the War Department.

Subject: Equipment of permanent Infantry division.

The Secretary of War has directed that there be stored at the home stations of each of the seven regular Infantry divisions the complete equipment for one Infantry division, war strength. Tables of Organization, Series A, January 14, 1918, as amended. This equipment, less the animals, will be turned over to the control of the division commander. All this equipment will be serviceable and ready for issue. The animals for an Infantry division at peace strength will be kept at the auxiliary remount depot adjacent to the home stations of the Infantry divisions referred to. These

animals will be turned over to the division commander upon his requisition. Any provisions of paragraph 5, General Orders 91, War Department, 1919, which conflict with the above will not apply in the cases of these seven divisions.

You are directed to take the necessary action as concerns the equipment issued by your service.

By order of the Secretary of War.

H. L. FINLEY, *Adjutant General*.

HOME STATIONS OF DIVISIONS SUPPLIED WITH SIGNAL CORPS EQUIPMENT UNDER ABOVE ORDER.

First Division, Camp Zachary Taylor, Kv.; Second Division, Camp Travis, Tex.; Third Division, Camp Pike, Ark.; Fourth Division, Camp Dodge, Iowa; Fifth Division, Camp Gordon, Ga.; Sixth Division, Camp Grant, Ill.; Seventh Division, Camp Funston, Kans.

Also the following Coast Artillery organizations: Thirtieth Artillery Brigade, Camp Eustis, Va.; Thirty-first Artillery Brigade, Camp Lewis, Wash.; Thirty-ninth Artillery Brigade, Camp Jackson, S. C.

Mr. GREENE. We are not advised, so far as I know, that the field is occupied now by any assembly of seven divisions functioning as divisions, with all their accessories and necessities for field communication.

Capt. ALBRO. As to that I can simply say that I have been ordered to furnish the equipment for seven divisions.

Mr. GREENE. Of course, we are thinking of the policy, with which you have nothing to do.

Capt. ALBRO. Furthermore, into that comes the same problem that we brought up before this committee once before, namely, that even though a division has not its full strength, even if it has only 50 per cent of its full strength, the signal equipment has to be supplied up to 100 per cent.

Mr. GREENE. I understand that.

Mr. McKENZIE. Have you had orders to not only furnish regular equipment and also reserve equipment for seven divisions?

Capt. ALBRO. We have not had the money to furnish the reserve equipment. We have been using up the reserve to furnish material and to maintain what we had, and the French bought practically every dollar's worth of radio apparatus shipped from this side, of American manufacture, and we did not get any of it back.

Mr. McKENZIE. The question I asked you was whether or not you had received orders not only to equip the seven divisions, but also to put in a reserve supply for the seven divisions.

Capt. ALBRO. In so far as new procurement was not necessary. That was the proviso.

Mr. CALDWELL. How long will it take to make the equipment for a division?

The CHAIRMAN. That is in existence.

Mr. CALDWELL. I understand, but there is not enough in existence to take care of an army of a couple of million men.

Capt. ALBRO. No, sir.

Mr. CALDWELL. I understood you to say they have no reserve except where they have the stuff already on hand, that you are not asking for any now. But I was trying to find out how long it would take to make the equipment for a single division, so if we should get into a war and have several million men in the army, how long it will take us to get ready for them?

Capt. ALBRO. In reply to that I can simply go back to August, 1918, at which time the Signal Corps started the present machinery, after the separation from the Air Service. From August, 1918, to November 1 we developed so that we were going on a 100 per cent production basis.

Mr. CALDWELL. To make one set.

Capt. ALBRO. One hundred per cent production for the requirements of the entire force in France.

Mr. CALDWELL. So in a matter of three or four months—

Capt. ALBRO. (interposing). We get our machinery in motion because we know where it is and can put it in motion.

Mr. CALDWELL. So the commercial enterprise of America is big enough in this particular line and the knowledge of the army is thorough enough so that in, say, four months you can get such equipment as we will need for an army of several million men.

Capt. ALBRO. There would be individual cases, in all probability, of certain key articles which might throw a monkey wrench into the machinery until we could get that thing eliminated.

Mr. CALDWELL. Would you say we would be safe in saying that in six months' time we could supply them?

Capt. ALBRO. Col. Mauborgne does not think the radio manufacturers of the United States could meet that demand in six months.

Mr. CALDWELL. How long would it take, Colonel?

Col. MAUBORGNE. On certain sets, it takes one year.

Mr. CALDWELL. One year to make one set?

Col. MAUBORGNE. No; to make a sufficient quantity.

Mr. CALDWELL. So, if we got into a war now, it would be a year before we could get ready to really fight, as far as the radio service is concerned? I did not understand that to be the case, but I am afraid that would be the conclusion placed upon your answer.

Capt. ALBRO. As Col. Mauborgne brings it out, he wants it to go into the record that the equipment they are getting now is not the contemplated equipment in its entirety so far as the future plans are concerned; that is, equipment of the Signal Corps. But I think we can state that the Signal Corps could, in six months, have sufficient equipment for anything on this side of either ocean.

Col. MAUBORGNE. May I say a word at this time? The situation with regard to the radio equipment at the close of the war was this: The majority of it was turned back to France because we could not keep up the apparatus. That took all the new French radio material. We took a certain number of repaired sets of radio, sets such as would be used at regimental, brigade, and division headquarters, and brought them home for primarily vocational training purposes. We have not been letting them go out for vocational training purposes because the new equipment is slow in beginning to come through, and we are holding that French equipment and practically issuing it to troops as we had it in France for a period of about one year, at which time our supply of French vacuum tubes will be exhausted, when we must have this other, American-made equipment ready. Then, the Cavalry pack sets were not needed in Europe; so we must get those, and certain airplane sets were not dreamed of in France, which must be put into production and purchased for the new army. But we could take the field and go into a foreign country to-morrow with all this old radio equipment we have on hand, and probably do business for a year.

The question of how long it takes to supply a given article should be of interest. Our regulations concerning bids, etc., result in very slow procedure. Granted that we have ready specifications and drawings for the manufacturers, proposals are sent around to likely bidders. The process takes from two weeks to a month to get the answers back. In the meantime, the bidding firms examine the specifications and drawings and go back and figure over them and the contract is not placed until from one month to two months after the ball starts rolling, and they can not start to deliver the apparatus ordinarily in less than 60 days, and in the majority of cases it is 90 days from the time we let the contract, up to six months, before you get a single thing on the order.

The CHAIRMAN. In that connection we were told before we got into the war that if we had on hand the tools, the jigs, the dies, and the gauges that were necessary to manufacture a rifle so that they could be delivered to the manufacturers, production would begin almost immediately.

Capt. ALBRO. That is right, Mr. Kahn.

The CHAIRMAN. Are the things that you use of such a character that you could have sets of tools, jigs, and gauges ready to deliver to a manufacturer so that he could turn out any quantity of those very pieces of apparatus?

Col. MAUBORGNE. In a great many cases that is the way we have gone at it. We have made, while there was still time, two or three sets of tools so we would not have all our eggs in one basket, but we would try to farm out production to a concern in Chicago, to another in New York, and to another somewhere else. That is the case with the field buzzer. We now have two or three sets of tools for making the buzzer, and the manufacturer does not have to wait to make the jigs and dies and other tools for those. But in the case of a new radio set it takes considerable time to get suitable tools made. There was the neck of the bottle during the war, because the toolmakers did not exist.

Mr. CALDWELL. As you make a new design, do you make the tools?

The CHAIRMAN. When you finally complete your process and you get the piece of machinery that is going to answer your purposes, will you make a number of sets of jigs and tools so you can turn them over immediately to the manufacturers should it become desirable to manufacture those things in quantity?

Col. MAUBORGNE. Not in every case, Mr. Chairman. Perhaps I had better go back to the process of the evolution of the set. It is put in one of our laboratories and one or two models are made. These models are made by skilled machinists, it is true, but if Mr. So-and-So from Chicago comes in and bids and somebody else from somewhere else comes in and makes a bid on the development order—and mind you, we make only a few models at first, we would hardly be justified in having tools made at that time. We are later directed by the General Staff to have prepared a limited number of these devices and they then give them to some artillery regiment or some other regiment for test; hence we next place a development order for samples. At this time the manufacturer gets the development order and works up a set of tools which is required by the order only if the apparatus produced is so special in form as to require special tools. But it is obvious that the thing to do is to utilize, as far as practicable, existing tools, so that when the American Electric

Co., for instance, bids on a field telephone set, it has in mind the use of certain jigs and dies already in its possession and the production of certain parts according to its own patterns; whereas, if the Western Electric Co. gets bids, it has in mind the use of certain other fixtures which permit them under those conditions to save money on the jigs and dies or whatever other tools may be necessary. And we let them introduce such changes and utilize their own tools if practicable, inasmuch as they introduce only small changes in the set, and revise our drawings accordingly, and in the specifications we attempt to permit such latitude that the American Electric Co., for example, can supply their equipment with certain unit parts which will fit in the same place as some unit as supplied by the other company, and the result is that we do not get both a set of tools because we would be wasting money if we did that.

The CHAIRMAN. But you get spare parts from the manufacturer?

Col. MAUBORGNE. We do not put them in stock except in the cases of parts which may be expected to go to pieces in the field, such as head receivers, etc. Then we secure a maintenance stock for that particular piece of apparatus and we put those things in stock. In France, in the depot where these articles came in in damaged condition from the field to be revamped there were bins for certain sizes of screws and nuts and other replaceable parts which we get from the manufacturers about the same time we buy the apparatus. We figure the replacement parts out, and we have found that it would not pay us to keep a complete stock of all these articles on hand. In some special cases we will buy two or three complete sets of tools and then we save time by having the tools ready. That is in time of peace; but we can not do that in time of war. Radio, for example, develops very rapidly. You have something new tomorrow and in each case you have got to start from the ground up in making the tools.

Capt. ALBRO. I think that covers the subject of the new equipment, with this exception: The Signal Corps was directed on Thursday or Friday of last week that it would include in its estimate for the purchase and maintenance of signal equipment all those items of equipment which it purchased prior to the war and which were turned over to the Director of Purchase and Storage. The Signal Corps has no record of the amount of this material in stock. The inventory of December 31 has not been completed and turned over to us. But we have tried to secure all the information we can from the signal section of the office of the Director of Purchase and Storage, and on that basis our peace time maintenance estimate for this material would be about \$126,137.70. For initial issue of this same classification we are submitting an estimate of \$252,811.72, so that the total equipment the Signal Corps is asking for for land forces in the way of new equipment and replacement of old equipment is \$775,320.62, and that is on the reorganization bill program.

Now, in connection with the maintenance on a peace-time basis, we have the maintenance of units other than the Army units. That will be for the maintenance of the various reserve officers' training corps units, those of the Field Artillery, the Coast Artillery, the Moto Transport Corps, the Air Service, etc., which enter into the proposition. Those units must have expendable material supplied to them. That figures up so far as the Signal Corps items are concerned to

\$328,134.29. On the purchase and storage item, that is items purchased by the office of the Director of Purchase and Storage under the directions contained in circular 303, the maintenance is \$126,137.70, making a total for maintenance of \$474,231.99. This added to the \$775,320.62 needed for furnishing new equipment and replacing old makes the total for the land equipment amounts to \$1,249,592.61.

Now, the office of the Director of Air Service on the approved Army program, has submitted to the Signal Corps its requirements for Signal Corps equipment to be furnished for the current fiscal year, including both new equipment and maintenance. We have checked this against everything we have in stock, the total estimate is \$1,827,791. The Signal Corps can not supply that material and keep within its figures, and it has so notified the Director of Air Service. We have therefore brought that figure down to the difference between \$1,873,491.61 and \$1,249,592.61, making a little over \$620,000; in other words, one-third. We had to do it to keep within our figures.

The CHAIRMAN. What did the Air Service say to that?

Capt. ALBRO. They said they did not see how they could get along without their minimum estimate, and we told them we did not see how we could furnish it to them on our estimate, and that is where the matter stands to-day.

Now, I want to bring this point out, and that is that in these figures there was not included for next year the continuance of the furnishing of Signal Corps equipment for vocational training services without reimbursement. Gentlemen, we can not do it. I have here one requisition, which we will fill, a requisition on Fort Wood at the present moment amounting to \$642,774.57 worth of radio material for vocational training, out of the Signal Corps maintenance material intended for the Army for next year. If we did not have to furnish this requisition we could cut \$400,000 off of this estimate, this being furnished without reimbursement.

Mr. GREENE. That training is the training of the enlisted men of the Army?

Capt. ALBRO. Making a big school out of the Army, a proposition which I think is backed by every officer in the Army, is it not, Gen. Lord?

Gen. LORD. I can not speak for every officer in the Army; it is the approved policy of the War Department.

The CHAIRMAN. It is backed by the Secretary of War and the administration.

Capt. ALBRO. The general orders are that we furnish that material if it is not needed for immediate military necessity, anything they ask for, without reimbursement, and immediate military necessity means a requisition in hand from some arm of the service.

Mr. MCKENZIE. This is a rather interesting item to me. Do we, as a matter of fact, practically have a parallel vocational training expense which we maintain in the regular Military Establishment? In other words, do we have to furnish a sufficient amount of material for vocational training for enlisted men in the Army that is required for the Army, including the enlisted men? In other words, are all the enlisted men in the Army taking training as Signal Corps men? I thought some of them were in the Motor Transport Corps.

Capt. ALBRO. In answer to that may I be permitted to state that the Signal Corps has furnished to practically every reconstruction hospital unit in the country radio apparatus of all kinds for reconstruction work and for vocational training. We have furnished to practically every recreational officer at every camp in the country Signal Corps equipment for that purpose, and in our own camp we have two schools, one vocational training school and one Signal Corps school, and they both requisition equipment, one under the director of our own school and one under the vocational and recreational officer of the camp. I can only state those facts.

Mr. McKENZIE. I think it would be quite illuminating not only for this committee but for Congress to have Gen. Lord give a statement as to the full amount of money taken out of these appropriations and applied to vocational training, and to know how far we have gone in this school work.

Mr. GREENE. Of course, the policy of the application of this apparatus and the necessities for which it was requisitioned are not in your keeping, and so any questions directed thereto would not be of avail on that matter. But it would seem, in passing, if a set was installed in a camp, the practical service to the enlisted man both in the way of vocational training and military instruction might be to permit him to use that.

Col. MAUBORGNE. The present orders, in my opinion, are accomplishing a considerable waste in regard to this vocational training, and I will show you how that is so, on one item, at least. We have on this requisition an item of 5,000 tubes vacuum V. T. modulator, costing \$92,000. We are under orders from The Adjutant General that unless those tubes are actually on requisition by some unit in the Army they must be supplied. The history of this item is more involved than the history of a lot of these other items on the requisition. These vacuum tubes were supplied to us by the Western Electric Co. under a contract with a certain patent clause. That particular tube costs \$18.50 apiece. The production was done on a cost-plus basis, and we are unwilling to give the Western Electric Co. the kind of patent clause used during the war, in case we want to buy any more, now that the war is over. We are open to infringement suits in the use of that tube, which are going to come up later; we are going to have to settle later with the owners of the patent, as determined by litigation. If we let the tubes now in stock be used for vocational training we are throwing dollars into the street, because we will have to buy more for the Army later under another contract, at a cost of \$36 or more, perhaps. The present procedure will only result in waste.

The CHAIRMAN. This vocational training is to be conducted at the divisional posts and you have a Signal Corps organization at every divisional post, have you not?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. That Signal Corps organization has the necessary apparatus for conducting Signal Corps work?

Col. MAUBORGNE. Of the division; yes, sir.

The CHAIRMAN. Now, is it at all impracticable to allow the apparatus that they have for Signal Corps work at the station to be used for instructing the soldiers who are taking the vocational training?

Col. MAUBORGNE. I do not see any reason why this apparatus can not be used in the divisions for vocational training work.

The CHAIRMAN. So there is no need whatever in your opinion for duplicating the apparatus?

Col. MAUBORGNE. I think not.

Mr. MCKENZIE. That is the point I had in mind.

Col. MAUBORGNE. Capt. Albro has put the case very well; that is, that this apparatus in large quantities is going to other places where there are no divisional units.

Mr. GREENE. That is done at the instance of the recreational or vocational officers in charge?

Col. MAUBORGNE. Yes, sir.

Mr. GREENE. The idea is, as I understand it, that these unfortunate soldiers when they are beginning to get into well-established convalescence manifest some idea of wanting to take vocational training?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. Then they have what has been described as pre-vocational training?

Col. MAUBORGNE. Something of that sort.

Mr. GREENE. They are confined necessarily to the restraints at the hospital; they are under some state of suspense and doubt as to their recovery and complete certainty as to the enlargement of their liberties, so these things are assembled there for them, and they make probably a more or less uncertain choice of what they may ultimately elect to follow seriously in the way of vocational training.

Col. MAUBORGNE. Precisely.

Mr. GREENE. Does it seem necessary to install complete apparatus that would be useful along practical lines otherwise for these young men at the one hospital who might elect to have the training?

Col. MAUBORGNE. I think not, and I am convinced that millions of dollars are being wasted in this vocational scheme where they issue apparatus which can be of use to the Army. We ought to leave it in stock until the time comes when the Army needs to use it.

Mr. GREENE. Of course, everybody is sensitively anxious to see these boys get everything they ought to have.

Col. MAUBORGNE. I agree with that.

Mr. GREENE. The question simply comes as to the practical way to do it. We all realize that a patient in convalescence is somewhat fickle in choice and actually a little capricious at times as to what he may elect to do. Would it be regarded as a very practical thing to-day to load the Government down with enormous quantities of these things that will not be put to a practical use at all, but merely afford a sort of opportunity to make a selection, when that patient shortly afterwards might be admitted to one of your established places where he could get the practical benefit already in existence?

Col. MAUBORGNE. And where he is better able because of his physical condition to do the work in a shorter time, which means less waste of material.

Mr. GREENE. Who is in charge and himself responsible for making requisitions to you for the kind of apparatus for these hospitals.

Col. MAUBORGNE. I am not familiar with the modus operandi.

Mr. GREENE. Are you getting those requisitions through The Adjutant General?

Col. MAUBORGNE. We are getting those through The Adjutant General with a positive order that if this stuff is not already requisitioned for units of the Army we must supply it. We have no option

in the matter as to whether or not we can say this will be needed later for the supply of the Army. If it is obsolete stuff, I agree it might well go into the hands of these men to be used up. But that is not the case. I can go down this list and I can show the committee a number of things which are needed in the Army itself. For example, here are 68 amplifiers on this list, which are standard apparatus, which are not going out of date within five years, and while they are not now on requisition in the Fort Wood depot they will be later, because all the units of the Army are not yet supplied. We are going to have to buy more of those amplifiers within a year, and still they are going out now for vocational training.

The CHAIRMAN. What is the value of those?

Col. MAUBORGNE. One hundred and twenty-five dollars each.

Mr. CALDWELL. Will the use of that amplifier in vocational training destroy it?

Col. MAUBORGNE. It might or it might not. At any rate there is deterioration with use, and before we can use it in the field the chances are it would have to go to some place to be revamped.

The CHAIRMAN. In teaching these unfortunate men, are Army officers detailed or is the training done by civilians?

Col. MAUBORGNE. There is a certain amount of this training done by civilians hired out of an appropriation of \$2,000,000 which Congress has made. But in addition to that, wherever in a hospital there happens to be a suitable officer who himself is a convalescent he ordinarily supervises this course. At Baltimore we have a Signal Corps officer and he has quite a plant of this stuff which he has secured through the operation of the order prepared by Vocational Educational Committee. He has radio telephone sets of that sort, and that telephone will be used in the Army for some time. It is subject to damage by amateurs who try to repair it, and before long it is simply a hopeless mass of junk, and you have wasted that much money.

The CHAIRMAN. There is a Vocational Educational Board which has offices in the old Maltby Building.

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. Are those the gentlemen who ask for this material?

Col. MAUBORGNE. The requisition ordinarily comes straight through The Adjutant General from the man on the spot, the officer in charge of the hospital. It goes to The Adjutant General and without question it comes to us to be filled. Recently they sent a committee to visit every storehouse in the United States to select on the spot anything they saw fit.

The CHAIRMAN. Whom do you mean by "they"?

Col. MAUBORGNE. So far as I know the party consisted of some officers appointed by The Adjutant General in connection with the civilians on that board you are speaking about, and they went around and they said: "Here is something not already on requisition, that we will take, and they "tagged" it for vocational training purposes to be covered later by requisition. Hence this requisition, which, for example, takes in another item of 68 of these radio-telephones.

The CHAIRMAN. Can you answer this question: Is any officer of the Signal Corps sent for by The Adjutant General to go over the list and see exactly what it is practicable to furnish or what is not practicable to furnish?

Col. MAUBORGNE. No, sir, there is no question as to whether it is practicable. The only question is, has that supply depot a requisition in its hands for that stuff?

The CHAIRMAN. And is the stuff at hand, I suppose.

Col. MAUBORGNE. We know it is there.

Capt. ALBRO. With regard to this particular requisition, the officer of the E. & R. branch went to the Fort Wood depot and saw this stuff packed there and requisitioned it.

Col. MAUBORGNE. We have to supply that because the order says so.

The CHAIRMAN. Are questions ever asked as to whether any of this stuff is surplus?

Col. MAUBORGNE. They presume it is surplus if it is not on requisition.

Capt. ALBRO. If it is in the depot it is surplus because it is not needed for immediate military necessity.

Mr. McKENZIE. I would like to have that requisition go in the record.

The CHAIRMAN. We will have that put in the hearings.

(The requisition referred to is as follows:)

Item.	Quantity.	Article.	Unit price.	Total price.
1	500	Masts, bamboo, French.....	\$3.55	\$1,775.00
2	288	Masts, bamboo, MS-5.....	5.00	1,440.00
3	200	Batteries, BA-4.....	.10	20.00
4	12	Equipments, RT-3 or 3-A.....	100.00	1,200.00
5	30	Equipments, A-3.....	17.45	523.50
6	210	Batteries, storage, Exide, 4-volt.....	23.00	4,830.00
7	27	Batteries, storage, Exide, 6-volt.....	33.00	891.00
8	15	Batteries, storage, Exide, 8-volt.....	36.00	540.00
9	42	Batteries, storage, Exide, 10-volt.....	42.00	1,764.00
10	709	Batteries, storage, Willard, 4-volt.....	23.37	17,971.53
11	7	Batteries, storage, Willard, 6-volt.....	30.86	216.02
12	29	Batteries, storage, Willard, 10-volt.....	35.00	1,015.00
13	31	Equipments, RT-2 (SCR-71).....	57.50	1,782.50
14	68	Equipments, RC-3 (SCR-72).....	145.82	9,895.36
15	21	Sets, radio, E-10 bis.....	1,307.00	27,447.00
16	10	Sets, radio, E-3 bis.....	500.00	5,000.00
17	14	Sets, radio, E-3 ter.....	750.00	10,500.00
18	68	Dynamotors, type DM-1, with carrying case.....	71.75	4,879.00
19	102	School instruction buzzer sets.....	178.00	18,156.00
20	17	Sets, SCR-82, less panels.....	527.50	8,967.50
21	17	Panels, BD-4, for SCR-82 sets.....	173.33	2,946.61
22	17	Panels, BD-5, for SCR-82 sets.....	193.93	3,296.81
23	1,700	Batteries, BA-2.....	.90	1,530.00
24	4,000	Tubes, vacuum, VT-1, second grade.....	5.00	20,000.00
25	10,000	Tubes, vacuum, VT-2, second grade.....	14.50	145,000.00
26	5,000	Tubes, vacuum, VT-2, modulator.....	18.50	92,500.00
27	6,000	Tubes, vacuum, VT-1, first grade.....	7.50	45,000.00
28	68	Sets, SCR-49.....	639.10	43,458.80
29	68	Sets, radio, receiving, SCR-59.....	446.83	30,384.44
30	52	Sets, radio, transmitting, SCR-65.....	271.86	14,136.72
31	26	Sets, radio telephone, SCR-68.....	463.73	12,056.98
32	68	Equipments, type RE-2-A.....	708.60	48,184.80
33	140	Power boards, type BD-1-A with cords, type CD-22.....	215.00	30,100.00
34	500	Equipments, antenna, type A-6.....	.10	50.00
35	500	Batteries, dry, type BA-4.....	.13	65.00
36	34	Batteries, type BA-9.....	175.00	5,950.00
37	136	Wave meters, type SCR-61, less head sets and batteries.....	6.00	816.00
38	25,000	Head sets, telephone, type P-11.....	.50	12,500.00
39	51,000	Rods, ground, 1/2" by 36".....	.02	1,020.00
40	1,020,000	Wire, counterpoise, type W-29, feet.....	5.75	5,865.00
41	102	Wire, No. 16 B & S single conductor, feet per M.....	120.00	12,240.00
42	2	Set boxes, T. P. S., type BC-21.....	240.00	590.00
		Battery charging sets, Delco, 1/2 kilowatt.....		
Total.....				646,474.57

In connection with the above requisition the Signal Corps desires to state that the educational and recreational branch of the General Staff has just advised the Signal Corps that the officer who had the above material withdrawn from stock at the Signal Corps General Supply Depot, Fort Wood, misinterpreted his instructions in taking such action. The educational and recreational branch of the General Staff has restored the above material to Signal Corps stock and is submitting all requisitions for Signal Corps supplies intended for use in vocational training to the Signal Corps for editing and recommendation before the material is supplied.

Mr. GREENE. Let me ask you a question right along the line of the introduction of the radio into the hospitals. In the first place, is it practical to find out by any such tests as are convenient in the hospital whether any young men there, patients, display enough adaptability for that sort of thing from the resources they can have at the place, so it will identify them as men well worth taking for practical training afterwards? Can you give them enough there?

Col. MAUBORGNE. I should think so; yes. I believe it would be practical to supply the component parts of sets upon which such adaptability could be determined.

Mr. GREENE. Is it possible, then, inasmuch as it is a physical possibility to demonstrate his suitability and fitness on the premises, even with those limited resources? Is it possible to do that through something you might regard as sufficient for that?

Col. MAUBORGNE. Precisely. We have recently received as the result of the termination of certain contracts a lot of unfinished or unassembled parts of radio sets. There are now in Fort Wood a certain number of coils of wire, a certain number of condensers, switches, crystal detectors and things of that sort that could very well be turned over to these vocational training centers and the personnel under instruction would not only get instruction on the set itself, but they would have instruction as to how to actually construct the sets. We will never be able to use this half-complete apparatus in the field, and that is the type of stuff that could go into those hospitals, and they could tell as well by the use of a crystal detector if a man is going to be a radio operator as they can by using these very valuable vacuum tubes I mentioned. It is a case of exercising judgment as to what material ought to be supplied, and the supply bureau having knowledge of the needs of the service should be directed to exercise its discretion as to whether those necessary and expensive things should be supplied on these requisitions.

Mr. CALDWELL. Have you filed any protest with The Adjutant General, or is this the first complaint you have made?

Col. MAUBORGNE. So far as I know, this is the first complaint. Capt. Albro may know something more about that.

Capt. ALBRO. We have sent such requisitions back stating that the necessity therefor was not understood, and they come back directing that the article be furnished if they are in stock.

Mr. CALDWELL. Did you take it up with the chief of the corps?

Capt. ALBRO. Yes, sir; we work directly under the chief of the corps.

Mr. CALDWELL. Did he take it up with anybody above him?

Capt. ALBRO. He thought the signature "By direction of the Secretary of War," constituted an order, and he followed it.

Mr. FIELDS. I think they had better use a canceling stamp on that sort of thing.

Capt. ALBRO. This requisition brings up another point. The Signal Corps wishes to say it is in favor of vocational training along practical lines because we want the men who are thus trained. But this is the first requisition I have seen come through for vocational training asking for school buzzer instruction sets, which sets, during the war, at our schools at Camp Albert Vail, Fort Leavenworth, and Camp Meade, furnished the basis of all instruction for radio operators. All other requisitions have asked for one or more of the big complete radio sets, instead of getting a primary set which can not be broken up and which gives as good instruction in code and training work as these more expensive large sets.

The CHAIRMAN. You say when you were training men for active operations in the war you confined the instruction to those simple sets?

Capt. ALBRO. Until they were qualified.

The CHAIRMAN. And that you made sufficient headway in the education and training of the men to enable them to get along sufficiently so that they did not have to take the expensive complicated sets until the conclusion of their training?

Capt. ALBRO. Yes, sir; and that same plan was successfully followed by the Navy.

The CHAIRMAN. That, of course, enables you to save on the manufacture of a great number of those complicated expensive sets?

Col. MAUBORGNE. And it did one other thing. It did not fill the air with a lot of rambling messages from more or less amateur hands on real radio apparatus. These buzzer sets are devices for teaching a man the code, teaching him to operate until he can reach a speed of 20 or 25 words. The Navy did that at Harvard and they passed through six or seven hundred men a month. The idea is to stop this tremendous rush of stray telegraphic conversations through the ether, as well as to train men on simple apparatus and save the cost.

Mr. GREENE. Is there not another phase of it? Only a comparatively small proportion of men trained to operate the radio are also of a capacity likely to pass into the mechanics of the proposition, men who would need to be particularly familiar with a great many ramifications of the apparatus.

Col. MAUBORGNE. That is very true.

Mr. GREENE. They would be message sending and receiving men, and except for some incidental repairs would not be required to be expert mechanics?

Col. MAUBORGNE. That is exactly so.

Capt. ALBRO. We follow the same principle at our school now and from among those men who show mechanical ability we make radio mechanics and they handle the sets from the mechanical point of view.

I think that covers the Signal Corps unit equipment, unless you care to hear us in regard to the Air Service appropriation.

The CHAIRMAN. I think we have enough on that to enable us to see the situation.

Maj. MASTELLER. Mr. Chairman, as I am here as representative of the General Staff I should like to say the procedure of the officers in bringing this matter of the issue of a large amount of Signal Corps apparatus for E. and V. purposes, in bringing this before this committee in this way, they are doing so in an unusual way, they are taking

very unusual action, because in my opinion the proper procedure for them to have followed was to have made representations to their chief of bureau, brought this to his attention so he might by a letter to The Adjutant General of the Army have set forth the condition which had arisen, recommending that different action be taken.

The CHAIRMAN. I want to say this for these officers, what they explained was due to questions asked by members of the committee. It was the questioning of the members of the committee that brought out this matter. Of course, Gen. March stated to the committee when he was before us in his hearings on the reorganization bill that any officer of the Army would be thoroughly justified in stating anything he thought the committee ought to know when questioned about it, and that there would be no fault found with an officer when he answered the questions.

Maj. MASTELLER. But the only point I wished to make was that this matter is brought to the committee's attention and has not yet been brought to the attention of the Chief of Staff.

Mr. FIELDS. I want to say in that connection that these officers have stated that some of these requisitions have been returned with certain suggestions, and the order came back to them to fill the requisition.

The CHAIRMAN. From The Adjutant General.

Mr. FIELDS. Yes. If these men who, by reason of their position and their knowledge of this service, know that grave waste is being practiced, and they can get only one order from the War Department and that is to fill the requisitions, this committee is entitled to that information, even if it does have to get it direct from these men.

Mr. GREENE. I do not think the question of the trial these men for any military offense is particularly before this committee, but there is one thing certainly before it, and as one I would like to firmly insist upon it, and that is that witnesses who appear at this table are expected to answer the questions asked by the members of the committee, no matter whether they have ever given the same information to anybody else or not. That is our purpose; we are trying to run the Government from our end.

Mr. FIELDS. And I, as one member of the committee, shall insist upon it.

Mr. McKENZIE. I want to say it was my question that probably opened up this whole subject, when I asked whether they were paralleling the expense of maintaining the Signal Corps by furnishing like apparatus for the carrying on of vocational work in training centers, and the record will show the reply they made to that. That opened up the subject, and I feel this way about it, that the General Staff, perhaps, is not advised as you say; but after all, the oath of an Army officer is to his country and not to the General Staff, and if there is any information that this committee, representing the people of the United States, can get in helping us to determine the various amounts of money we should appropriate to be paid by the taxpayers of the United States, then these gentlemen, under their oath as officers of the Army of the United States, in my view of it, are bound not only by honor but by their oath to give us the truth in the matter. I certainly would regret very much to think that an officer wearing the uniform of the United States would even be reprimanded for telling a committee of Congress some very inter-

esting truths, that not only this committee ought to be advised of, but that the country as well should be advised of, and I hope nothing of that kind will happen.

Maj. MASTELLER. I am not making any question of that. I think my position is not understood, Mr. Chairman. What I mean to say is that if this matter had been reported in the manner in which I suggested, by direct action, corrective measures could have been applied, and I believe would have been applied in a matter of this kind without its having had to go this far.

The CHAIRMAN. I want to add, that the sooner the War Department and the General Staff learn to be open and direct and frank with the Members of Congress, and especially with the members of the Military Committees of the Senate and the House, and to deal openly and aboveboard with the members of the committees and Members of Congress, and the sooner they learn that there should be mutual confidence between members of the committees and the representatives of the War Department and the General Staff, without trying to hide anything at all, the better it will be for the Military Establishment of this country, and the more friends the Army will make in the House of Representatives and in the Senate.

Capt. ALBRO. Mr. Chairman, I wish to state that my chief instructed me before I came here this morning to tell the whole truth and answer any questions without reservation of any kind whatsoever, and I further wish to state that in preparing this estimate I have taken into consideration everything I could, as a business man, such as I was before I entered the service.

On the 1st of July, what I consider my patriotic duty to my country will have been finished, and it will be time for me to resume my thought of my future and that of my family by returning to civil life and earning an adequate compensation without having to draw on my reserve account, through patriotism, to support them, as I have so far since entering the Army. It is with the sole idea in mind of loyalty to my country and to the Army that I have presented this estimate to the committee. I am merely a Reserve officer, practically a civilian, at the present time, and I trust, a practical business man, trying to put before this committee from a practical business standpoint the needs of the Signal Corps, which I look upon as one of the best run organizations I have come in contact with in the Army.

The CHAIRMAN. The committee is very thankful to you gentlemen for having presented your case as well as you have and for having given the committee a great deal of very useful information.

Capt. ALBRO. The next item, Mr. Chairman, is the miscellaneous item that was originally put in the estimate for \$250,000, but which we have cut to \$50,000. There are two items, one for the maintenance of the Signal Corps depot at Fort Wood, New York Harbor, \$25,000, and the other is for \$25,000 for unknown contingencies on the Mexican border, where the departmental signal officer has to act in connection with the border patrol.

The next item is \$30,000 for the Pigeon Service. Gentlemen of this committee had quite some details given in regard to the Pigeon Service in a previous hearing. I have a list of the performances of these birds along the Mexican border.

The CHAIRMAN. We would be glad to have that in the record.

(The matter referred to is as follows:)

USE OF CARRIER (HOMER) PIGEONS IN OUR PEACE ARMY AND MEXICAN BORDER PATROL.

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
Washington, November 1, 1919.

1. While much publicity has been given to the wonderful work of the carrier pigeons, our feathered messengers, on the battle fields of Europe, little has been said regarding their peace-time duties. Most pigeon fanciers have thought that now that the war is over the Army would have little use for their pets.

When war was declared the United States was far behind the European countries in the science of racing pigeons. It was a national sport in Belgium, parts of England and France. Most of the European countries had a well-organized pigeon service in their armies. After the armistice was signed all but about 30 of the 100 lofts, which had been established in the United States for the purpose of training troops in this method of liaison, were closed. It is intended to maintain a permanent pigeon corps of at least 30 lofts in the Regular United States Army. A loft will be maintained at West Point, our Military Academy, for the purpose of familiarizing our future Regular Army officers with the habits and methods of training these birds. A number of these lofts are to be maintained in the United States, also the Territory of Hawaii, Panama, and perhaps the Philippine Islands. A breeding loft for the birds and a school for enlisted men will be maintained at Little Silver, N. J., for the purpose of supplying birds and enlisted personnel for the various needs of the Army. There is being maintained at Fort Sam Houston, Tex., a breeding loft for the purpose of supplying and training young birds for use in the Southern Department. Additional stationary and mobile lofts will be maintained for the purpose of breeding and training birds for use of the Mexican border patrol. Lofts are maintained along the Mexican border where the birds are used for outpost duty by our Cavalry and air patrol. In spite of the fact that we have telegraph and telephone, and our more modern means of communication, the wireless, it frequently happens that this latter means of communication is rendered useless by atmospheric conditions, and it may not be practicable to build telephone lines or they may have been wrecked as a result of storms. This has been demonstrated by the recent storms in the Southern Department, where pigeons were used in the storm-wrecked areas. A United States Army relief train which carried a radio tractor, crew, and pigeons was sent to Corpus Christi. The pigeons were released and returned bringing the first news of conditions and information as to the setting up of the tractor, and instructions as to their call number and how to set the instruments to get in touch with Corpus Christi. Pigeons were the only means of communication had from this area for two days after the radio had been set up and put in operation, as atmospheric conditions were such that operations were not possible. The birds came through the storm and rain, making the 150 miles in from five to seven hours, while in normal weather conditions the flight would be made in from two and one-half to three hours.

The balloon school at Brooks Field and other posts in the Southern Department have demonstrated the superiority of pigeon liaison over all other means of communication, this being the only means of communication from free balloons in flight, balloons being used for the purpose of training balloon pilots. It often happens that in their flights they land distances varying all the way from 10 to 150 and 200 miles, often making their landing in the mesquite brush many miles from telephone or telegraph stations. The headquarters in town or at the post is kept in touch with location of the balloon by taking a sufficient number of birds, releasing one every half hour to every hour, an additional bird being retained to give their location upon landing, so that transportation can readily find them. Birds cover the distance of 10 miles in from 12 to 20 minutes, and 150 miles in 2½ to 3 hours, saving the balloonists long, tiresome walks to telephone stations. They are used in the same way in the Air Service where if it happens that an aviator makes a forced landing, due to engine or other trouble, he can send for assistance. This was recently demonstrated at Kelly Field, San Antonio, Tex., in a flight from Kelly Field to Austin, Tex., when two ships were forced to land; the birds delivered their messages calling for relief, the relief arrived, and the ships were repaired and on their way by the time telegraphic and telephonic communication had been effected. It can readily be seen that practical use can be made of pigeons by men on outpost duty in keeping headquarters informed of their whereabouts and of a possible raid. The Motor Transport Corps is now using them when trucks and truck trains are sent out on long trips where telephone stations are likely to be few and far between. The Army has turned over some of its lofts to the forest patrol, which uses them where telephone

connections are unavailable or destroyed. Civilians could use them in many practical ways on hunting trips or where they take long automobile trips in sparsely settled parts of the country.

These birds are quite dependable up to 500 miles. However, the best results are obtained from 20 to 250 miles. Birds must be disciplined and as carefully trained as any soldier of the line. Birds returning to their loft from short flights, unless properly handled, are very apt to loiter on the outside, when it is absolutely necessary, to successfully work them, that they trap immediately.

Special feeds are necessary to keep the birds in proper condition. Some of the feeds used by the pigeon service of the United States Army are Canadian peas, vetches, millet, milo maize, and rice; hemp seed is used only as a dainty. Wheat, as a rule, is not considered good pigeon feed. Grit must be provided, as it is necessary to keep the birds that are used for messenger service confined to their loft when not working. They are taught that the loft is the only place for them to get their feed and water. Fresh water is one of the most essential things for the successful operation of pigeon lofts. Most of the Army stationary lofts are equipped with running water.

This is one of the new branches of the service of the United States Army where there will be great opportunities for advancement of young men who desire service in the Army. Young men who are now in the service or who have had previous military service will be given preference, the only qualification necessary being that they have at least a grammar-school education with a natural liking for birds and animals. There are now a number of vacancies in the Southern Department headquarters loft, Fort Sam Houston, Tex., Western Department, and the Department of Hawaii. The work is pleasant and easy, and ambitious young men will have time and the opportunity for pursuing other studies while in this work.

2. The attention of recruiting officers and others concerned is invited to the fact that there are now a number of vacancies in the Signal Corps for pigeoneers or men who desire and have sufficient education to become qualified as such. Men enlisted east of the Mississippi River for this special service of the Signal Corps will be sent to the Signal Corps schools, Camp Alfred Vail, Little Silver, N. J. In the case of those enlisted west of the Mississippi River for this special service the provisions of paragraph 4, Circular No. 101, A. G. O., February 25, 1919, will govern.

By direction of the Chief Signal Officer:

F. R. CURTIS,
Colonel, Signal Corps.

The CHAIRMAN. Are the pigeons at Potomac Park a part of your service?

Capt. ALBRO. Yes, sir; and at Camp Vail we have pigeons which cost the Army \$5,000, selected by experts as the choice selection of all the birds brought together on the other side. If those birds were put up at auction in New York City to-day they would bring \$30,000.

The CHAIRMAN. You mean for the gross number?

Capt. ALBRO. That is for the total flock. Those birds at Camp Vail cost \$5,000 at the conclusion of the war, and if they were to go on the auction block to-day they would bring \$30,000. We are breeding from them and we want to keep that wonderful strain going.

The next item is for the Meteorological Service. I have cut that plan to 33½ per cent of the estimates as submitted, with the approval of my chief, as in all these other instances of reductions in original estimates. They asked for \$120,000, and that was cut to \$42,000. This provides for the pilot balloons used in securing meteorological data, which will cost half of the amount asked for the year, and it also includes a minimum amount for the upkeep of the expensive apparatus used, but it does not include the purchase of a single piece of new apparatus next year.

The CHAIRMAN. Your branch of the Army is doing that meteorological work?

Capt. ALBRO. Yes, sir; and they want us to do more, and we are training men at Camp Vail in this branch of the service as rapidly as we can, but it takes a particular type of mentality and adaptability

for success in this work, and we can not secure and develop that type of men as rapidly as the Army wants us to produce them.

The CHAIRMAN. Is there any other branch of the Army doing meteorological work?

Capt. ALBRO. As to that I can not state, because my interest lies only with the Signal Corps.

The CHAIRMAN. What I was wondering was whether there is any duplication of this work.

Col. MAUBORGNE. I suppose you know that before the war a certain amount of so-called meteorological work was done by the Coast Artillery. They needed certain data for the firing of their guns, and they got it themselves. The Air Service has very recently been making a strenuous attempt to either start a meteorological section of their own or to take that away from the Signal Corps which it now has. We believe that there should be but one meteorological service for the Army to furnish this information, and that as the Signal Corps has worked up this system until it has become a science and we have in charge of it one of the best men in the Weather Bureau, it should be allowed to function for the Army and that no other branch of the Army ought to have an organization for doing the same thing.

The CHAIRMAN. We recall the Weather Service was first conducted by the Signal Corps of the Army?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. And subsequently was transferred to the Department of Agriculture?

Col. MAUBORGNE. Yes, sir.

The CHAIRMAN. The Department of Agriculture, of course, is a civilian department. The Signal Corps can do all of that work that is necessary. Its experience in the past has enabled it to carry on that work very successfully.

Col. MAUBORGNE. The operations of the Meteorological Division in France were commented upon both by the English and the French as being far superior to their own.

The CHAIRMAN. That was conducted by the Signal Corps?

Col. MAUBORGNE. Yes, sir; by the very same organization we have here, or what is left of it here. The chief is still here. If the matter of meteorology can be straightened out so that the Signal Corps will continue to have it all, I think that will be the most satisfactory and economical solution of the matter for the country.

Capt. ALBRO. The next item is one with which the committee is undoubtedly familiar; that is, the photographic section of the Signal Corps. We are asking for that section for next year \$500,000, which is the same amount as was provided for expenses of the photographic section for this year. Of that amount only \$88,033.80 is for equipment for the Army because we have fully equipped the Army with photographic equipments, and we have our war reserve. We are selling what surplus we do not need, and the commercial concerns are extremely anxious to secure it because it is all good stuff. We want only sufficient money for next year for maintenance, to keep the equipment at the point of efficiency where it now is.

For the laboratories and the production of film and still pictures for recruiting purposes, vocational training, educational purposes and for sale to the public of photographs made from the negatives taken on the other side and in this country, and for the maintenance

of laboratories and the operation of a sales force we are asking \$361,659.33.

In that connection I want to state this, that in the American Expeditionary Forces we took 10,080 different scenes, different classifications covering 650,000 feet of negatives which has been censored, and of that we have printed only 900 feet and edited 1,616 feet. Of the domestic negatives we have 340 with a total of 3,000 feet, none of which has been edited and only 100 feet of which has been printed. We are not where we ought to be on that on account of lack of funds.

In the training of the Army film, which is used in every camp, and is used continuously, there are sets of 62 reels in circulation, amounting to a total of 3,000,000 feet, and we need 3,000,000 more feet which we want to put out just as quickly as we can make the prints. The raw stock costs only \$85,000, but we have not got that much with which to buy the raw stock.

The CHAIRMAN. Where are those films displayed?

Capt. ALBRO: At the camps. They are all in connection with the training of the soldier. There will be 72 reels in the set when it is finally completed, and it is one of the best methods there is for training the soldier.

We have about 50,000 still negatives indexed, and we have 273,000 prints of these, and we have a great number of enlargements of those pictures which are touring the country. We may have to move the laboratory which has recently been equipped at the Washington Barracks. We may have to move out of that building if we can not get the legislative, executive, and judicial appropriation bill arranged, because that work has got to go on just the same.

The next item is the second big item of this appropriation. It is in connection with the Signal Corps operation and maintenance of commercial and Government-owned telephone service for the Army at large. The figures prepared by the department Signal officers for next year included no replacement of any equipment. If a storm takes down a telephone system it can not be replaced, because that expense is not included in this estimate. The amount covering this maintenance is \$1,803,860.92. There are approved projects which we have got to find a way to finish. We could not do it this year, and the amount needed for that work is \$303,989.83. This covers work which is necessary for the proper functioning of the Army.

The CHAIRMAN. If you complete those projects will it effect a saving in other directions?

Capt. ALBRO. It will increase the efficiency, but, as to the exact saving, Capt. Franks will cover that point. In the amount of \$1,803,860.92 I mentioned there is an item of \$300,000 which is for interest, taxes, etc., and goes to the telephone companies for these installations we have had put in at our various camps and cantonments. For \$600,000 we can buy them out, lock, stock and barrel. In other words, the \$300,000 in the item of \$1,803,860.92 just mentioned and an additional \$300,000 would buy that equipment outright, and end the paying of the \$300,000 once and for all time.

I therefore feel it is a good thing, from a cold, business point of view, to put in an extra \$300,000 in order to save another \$300,000 this year, and save \$300,000 the following year, and so on. By put-

ting that additional \$300,000 in there this year, you will save \$300,000 next year.

Then, there is an item for maintenance expenses of \$200,000, making a total of \$2,407,850.75. Capt. Franks, of the commercial telephone service section, office Chief Signal Officer, will now answer any questions the committee desire to ask him. He can explain whatever you desire to know in reference to the commercial telephone service in the Army.

Before Capt. Franks makes his statement, there are three minor items that complete our estimate. The first one relates to miscellaneous supplies and printing, and items of that kind, for which the amount asked is \$10,000, which is the same amount we spent this year. The Director of Purchase and Storage did most of our printing for us this year. Then, there is an item for the training of our own Signal Corps men, amounting to \$75,775. That is for miscellaneous training expenses, and for expenses at Camp Vail, in our school there, and for the Army signal school at Fort Leavenworth. Finally, there is an item of \$25,000 for the Signal Corps force now in Germany, which is the same amount they had appropriated for this year.

The CHAIRMAN. How many Signal Corps men have you in German territory?

Capt. ALBRO. There is one field battalion, consisting of 21 officers and 385 enlisted men.

Col. MAUBORGNE. This is also for the upkeep for the lines back of the force we have in Germany.

Capt. ALBRO. Capt. Franks will tell you about the commercial service.

The CHAIRMAN. You are attached to the Signal Corps?

Capt. FRANKS. Yes, sir; at the present time I am in charge of the commercial service of the telephone section of the Signal Corps, during the absence of Maj. Anthony on other official duties in Chicago.

In the early part of 1917, when the war broke out, the cantonments were being rushed to completion everywhere. The Signal Corps had not had, except in permanent posts, such as Coast Artillery posts, telephone apparatus, switch-board equipment, and so forth, and we did not know where the camps were to be or what the size of the camps would be, or what amount would be required, nor could we say how long we would hold these camps, or how long the war would last. They were established outside of the telephone companies' regular area. For instance, Camp Meade, as an example, was away from both Baltimore and Washington. There were not sufficient trunk lines to those points to accommodate the Army's needs.

Now, the telephone companies are required by law, within a city, to furnish you telephone service, but the law does not require them to furnish service where they do not have existing facilities. We went to the telephone companies and asked them what they would put communication lines in there for and whether they would do that on a basis of commercial rates. They said they had no rates at those points because they had no existing facilities. The Signal Corps then asked what they would do in the matter of temporary installation. There are two propositions. You sign a short-term contract and at the termination of that you pay the cost of the installation, less the return which has been derived by monthly rentals, or, in the case of the Signal Corps, will you do this: If you people will permit us to buy, we will buy and furnish the equipment and the Government pay installation cost and a portion of cost of material.

This was the history of it. The original agreement was that the telephone company would provide a plant for the use of the Army, such as the big switchboards and all of the facilities in connection with the telephone, and for such use it was to be paid for by the initial charge of the cost of the plant, less the removable salvage value. That salvage value was in the case of the central office plant the cost f. o. b. factory; they would pay 75 per cent of that cost and the Government would pay 25 per cent of the cost, which 25 per cent was to reimburse the telephone company for the labor to take it out when we got ready to dispense with it and also was to cover obsolescence and the misuse of that plant.

It was not a cost-plus contract; it was a cost contract, the only proviso being that we would pay for any cost in installation when those camps were put in. The equipment being owned by the telephone company, they had to pay taxes at the rate of 2½ per cent on the appraised value of the plant. They would not put such plants in these flimsily constructed buildings without some form of insurance. They said they would expect us to insure the plant and make reimbursement if it were burned.

They said the 75 per cent value of the plant is money out of our pocket; we have to borrow the money. We will borrow that money, they said, if we would pay the interest at 6 per cent. We pay that to-day on the value of their proportionate share of what they own in the camps. To keep these plants in addition we pay 7 per cent for the outside plant and 3 per cent on the switchboard to keep that in repair and for maintenance. The Government paid originally the labor cost, which was probably 60 per cent of the entire value of the plant.

The CHAIRMAN. Are those contracts still in force?

Capt. FRANKS. Those contracts are still in force.

The CHAIRMAN. You are asking for an appropriation to meet your obligations in connection with that installation?

Capt. FRANKS. Partly; we are asking for a sufficient amount to obtain by purchase that portion owned now by the telephone companies, as Capt. Albro stated—I have here the figures, \$487,309.31, which is represented as the amount owned by the telephone companies in the camps that we think to-day are likely to be permanent, plus the flying fields, which amount to practically \$112,000, making probably \$600,000 in round figures as represented to be owned by the various telephone companies to-day; that is, including the central office equipment and outside plants in these places. If they took that away we would have to put in some form of telephone communication which would cost us probably twice as much; but by paying only 75 per cent of the cost f. o. b. factory of the central office equipment and 60 per cent of the cost f. o. b. factory of the outside plants (on which we have already paid 25 and 40 per cent for removal charges) we will own the plant entirely.

Mr. McKENZIE. If I understood you correctly, you stated that the Government paid the labor cost in installing the plants.

Capt. FRANKS. Yes, sir.

Mr. McKENZIE. And that was about 60 per cent?

Capt. FRANKS. Of the entire cost; yes, sir.

Mr. McKENZIE. The telephone companies furnished the instruments?

Capt. FRANKS. Yes, sir.

Mr. McKENZIE. And the wires?

Capt. FRANKS. Yes, sir.

Mr. McKENZIE. And the switchboards, and you have been paying the insurance?

Capt. FRANKS. Yes, sir.

Mr. McKENZIE. You have also paid the interest on the investment?

Capt. FRANKS. Yes, sir.

Mr. McKENZIE. How much rental do you pay?

Capt. FRANKS. We pay \$3.60 a year for each instrument, and the camps average about 300 lines. We pay in addition to the \$3.60 a superimposed charge of \$6 for those instruments having access to the trunk lines which the telephone companies have built for long-distance service.

Mr. McKENZIE. When you undertook to buy, you stated you would pay them 60 per cent?

Capt. FRANKS. No, sir; only what they owned, the salvage portion.

Mr. McKENZIE. Sixty per cent of the value of the wire and the instruments?

Capt. FRANKS. We would pay 75 per cent in the case of central-office equipment.

Mr. McKENZIE. Seventy-five per cent of the original cost or the appraised value?

Capt. FRANKS. No, sir; only of the material, f. o. b. factory. We have already paid the labor cost. Say a switchboard cost \$10,000; of that \$10,000 we have paid 25 per cent already for removal charges, and when we pay the other \$7,500 we would own the entire equipment.

Mr. GR ENE. As I gather it, the contract we have with them really enabled somebody else to borrow money on which we pay the interest; we pay for the installation, and we have paid for every other thing, and then paid rent on something which we really enabled them to get.

Capt. FRANKS. There is no profit to the telephone companies at all. This material was all bought from the Western Electric Co. or other subcontractors, and the price was f. o. b., what the contractor charged the telephone companies to furnish the material in the camps. The telephone companies said, we will put it up in your camps but we will not pay the labor cost. They charged us \$3.60, which is the royalty on the patent, for the use of the patented instrument alone.

Mr. GREENE. I thought that was a rental charge.

Capt. FRANKS. No, sir. The purchase of these plants and putting them under the Signal Corps is regarded as preferable by every Army man I have heard speak of it. As it is now we have dual ownership in the Government reservations. The telephone company owns the plant, they must maintain their maintenance force there, and they charge the expense of that maintenance force to the Government.

Take the case of Camp Meade. The telephone company's engineering forces are located in Baltimore, and when they have to come to Camp Meade that means a loss of three hours' time, and the telephone company can not bear that loss. The Government pays for the cost, pays for the time, from the time the employees leave Baltimore and get back to Baltimore again from Camp Meade. There is also to be included some overhead in the general offices of the American Telephone & Telegraph Co. in New York, in connection with the design of the plants. We must pay a certain percentage for that. Altogether, at the best estimate we have been able to make, the

commercial service has figured that we will have saved the cost in three years' time, if we purchase the plant. As to whether the telephone companies will be agreeable to our proposition, I can not say, but we hope to get around it on the grounds of military necessity; that in our reservations the Government of the United States, for military purposes, must have control of it. We do not have control of it to-day. The commanding officers of the camps do not like to have people around the camps who are not subject to the commanding officers' orders. It makes for confusion.

Mr. McKENZIE. In case the Government should buy these plants, would the Government be free from the rental charge on these plants?

Capt. FRANKS. If we buy the plants outright we will be practically free of every expense there is to-day, with the exception of trunk rental for long distance. So far we have had an agreement in two instances, at Aberdeen, Md., and at Camp Benning, Ga., where the telephone companies have agreed to sell the plant in place. We have another at Camp Lee, Va., if that is to be a permanent camp, they will sell to us. Those are the only three for the purchase of for which we have negotiated.

Mr. McKENZIE. My question was if you buy this plant will you have to pay some telephone company a rental on the instruments that are installed in the camp?

Capt. FRANKS. No, sir; and all other running charges are stopped.

Mr. GREENE. And the royalty you are now paying?

Capt. FRANKS. Yes, sir; stopped.

Mr. FIELDS. They will have to assume the royalty?

Capt. FRANKS. As it is now, under the rate-making terms they are allowed that royalty, that is one of the elements of expense on which they build up the rates, and if we buy, it does not belong to a telephone company and therefore they are not interested in any rate-making costs. It belongs to us. They are interested in what goes to make up the cost of the plant for rate-making purposes only.

Mr. McKENZIE. Of course, there was an installation put in each of these camps to take care of a camp composed of between forty and fifty thousand men, and that equipment would probably be ten times the amount that will be required to continue the camps that we will continue in the future. Do you think you could dispose of that surplus stock to any advantage?

Capt. FRANKS. Some of it will be; take the central-office equipment, that is rather complicated. We have installed in all our camps a multiple board. The multiple board means every position can be operated from any other position. We have all our boards so arranged, and to remove any two sections of that board means a high labor cost and a reassembly practically of the whole plant, so the little value you might secure in taking out three sections of the six would probably be more than eaten up by the labor cost.

Mr. McKENZIE. Take Camp Meade as an illustration. Suppose the Government says we will continue that camp and keep 3,000 or 5,000 men there, and they will have a central headquarters and a few other buildings there, but there will be no necessity for any very large number of telephones. The United States Government undoubtedly has a great surplus of these telephones all over the country at the present time. You propose to go in and buy this whole plant?

Capt. FRANKS. No, sir; I have two estimates here. The \$487,000 is based—

Mr. McKENZIE (interposing). That is one of your propositions. One of your propositions is to buy this equipment, and that will save you installing a new plant which you would have to do if the telephone company removed the existing plant. In case you buy the whole plant and undertake to salvage the surplus material, you would have a large amount, because you would not need all of what is there now, and judging from the prices we have received for some of the material we have salvaged, I am a little bit skeptical as to whether or not you could strike a balance between the amount you would pay for this entire equipment, taking the amount you received for the sale of the surplus and then figuring what it would cost to put in a new plant sufficient for the peace-time needs of the Army—whether or not you could not say to the telephone company, You take this whole plant away and we will put in our own new plant.

Capt. FRANKS. The proposition there is this: All of our camps—take Camp Meade as a fair example. There are 22 positions on the switchboard. The Government does not use those 22 positions. We are now using only 6.77 positions.

Mr. McKENZIE. Then the company would not sell you a part of the plant and take away the remainder?

Capt. FRANKS. They will have to. We are now working on negotiations—and they want in the camps an arrangement whereby they can have pay stations. By the use of the excess plant there they have found it was cheaper to put up a five-position or a ten-position board—it is cheaper to put up a five-position board, in connection with the farm or rural community boards. They are proposing now when they have to get out of our camps to utilize that for the farmers, and at the same time fitting up pay stations at our camps, which we are permitting them to do, so that the soldiers may have access to those pay stations and not use the Government telephones at the expense of the Government. So we have agreed to permit them to put those in our camps, and that is done on a proportionate basis, as represented by the number of lines on the board and the pay stations connecting with the outlying country. If we use 40 lines on the board and they use 40 lines on the board, we pay 50 per cent of the entire cost and they pay the other 50 per cent for operation and maintenance and for traffic and engineering expense. If we have a plant of 22 positions of which we use only six or seven, you can see that the telephone company, paying over two-thirds of that expense, is going to zealously guard their expenditures, because they pay the greater portion of the running expenses.

To get away from the dual control in military camps, with employees there over whom we have no control, and also involving alterations that we have nothing to do with, and also involving the 6 per cent interest on the money, and the 2½ per cent taxes, and the 1 per cent for insurance, we have figured that we could save money and get away from that dual control if we bought the plant. If we bought the plants we would have our own enlisted personnel do the greater part of the maintenance work, and that would provide them with training for any maintenance work they might have to carry on on the battle front.

The CHAIRMAN. Take Camp Meade again, as an example. You have stated, I think, that if anything gets out of order the telephone employees in Baltimore have to be sent to Camp Meade. That requires three hours' time. The telephone company charges the Government for those three hours, and the Government is expected to pay it?

Capt. FRANKS. Yes, sir.

The CHAIRMAN. If you acquire these plants for the Government and they get out of order, have you men trained in the Signal Corps who can make those repairs without resorting to the services of the employees of the telephone company at all?

Capt. FRANKS. At the school at Vail they are now having a very complete system of telephone engineering work, looking to maintenance alone. The Signal Corps would never attempt to construct this plant in time of war. It would be cheaper to utilize every man we get as a soldier, and it would be better to let the telephone company, as it did in the last war, do the new work. But for the maintaining of the plants the Signal Corps to-day is training men for maintenance work, which includes the repair of cable lines, testing, the redistribution of systems, etc. For instance, the placing on a multiple board one instrument alone, unless your board is so adapted to it, means over 100 steps between the distributing frame and the switch-board itself. To completely connect that up on this multiple system where it can be worked from one section of the board to another is one of the things we are training these men for. We would draw from the ex-telephone people now in the Signal Corps to maintain these plants. At the present time in the majority of the large camps the telephone people have one or two people there, and with the assistance of the Signal Corps personnel we think we can maintain our own plants.

Mr. MCKENZIE. Is that the system you had in the War Department during the war?

Capt. ALBRO. The commercial telephone service in the War Department in the District of Columbia is the only commercial telephone service of the Army which is not handled by the Signal Corps.

Capt. FRANKS. At the present time we have a very peculiar condition in regard to the automatic. We now are training men in the use of the automatic. In connection with the part of this estimate I have here a report of a board of officers at the Panama Canal. It has to do the placing of the garrison on the west side of the canal, and the board has recommended and so far has proceeded with the construction of certain quarters; it has quite an extensive program for new buildings and other construction. In the Panama Canal we will have to adopt probably an automatic system.

The CHAIRMAN. Of course, that is a matter of administration with which this committee is not concerned.

Capt. FRANKS. I just brought out that proposition to show that in this case in the Panama Canal we have had to work separately from what we have in this country, and because there we would not have a telephone company to draw upon for any stock which they would have on hand. We are now asking for just what the Army has to-day in Panama, and not to take care of what they expect to get next year, but to make a tentative plan for each project, and we have gone as low as we can in the Panama Canal. If they give the Army the buildings which they feel they should get, I am afraid we will not be able to give sufficient service in Panama until we get our next appropriation.

Capt. ALBRO. Mr. Chairman, I just want to sum up this proposition to bring before the committee the figures in my original statement and to invite your attention to the absolute economy in appropriating

\$300,000 for purchase of this telephone equipment, so that we can save \$300,000 this year and the same amount next year.

I wish also to correct a statement I made in answer to Mr. McKenzie's question, that outside of the zone finance officer, the zone supply officer, and the field offices in Washington for which the Signal Corps supplies the telephone service, the War Department telephone service in the District is handled by somebody else and not by the Signal Corps.

The next item is for the Washington-Alaska Military Cable & Telegraph System.

The CHAIRMAN. We went into that in considerable detail a few days ago when Gen. Richardson was before the committee.

Capt. ALBRO. The amount of \$140,000 is the same as the amount appropriated last year. What the committee went into the other day was the proposition in regard to new stations. The \$140,000 is the same amount we have this year, and in addition we have had to ask for a \$95,000 deficiency, because a stretch of the cable went out. The Chief Signal Officer desired me to state that this is liable to happen at any time, and when it does happen we replace the cable as soon as possible. We had in this year's appropriation \$50,000 for the cable, which we had use for, and we want the \$50,000 to stay in next year's bill so that we can put that amount of cable back in stock and be ready for any emergency because if the Alaskan cable goes out, Alaska is shut off from communication with the world.

The CHAIRMAN. Is that included in the \$140,000?

Capt. ALBRO. Yes, sir; that is for betterments and such cables as are necessary, and for maintenance. If a spark gap goes out on a radio set, it also comes out of that amount.

The CHAIRMAN. As a matter of fact, the cable and radio system pays for itself from the receipts from private concerns which use your plant?

Capt. ALBRO. Yes, sir; the \$140,000 is from the receipts covered into the Treasury. We generally get about \$175,000 or \$180,000 from private messages, and in addition to that the system handles from \$180,000 to \$300,000 worth of Government messages free of charge.

The CHAIRMAN. I wish you would put in the hearing a statement showing how much you get from the private concerns for the use of your plant and also the value of the Government business that is handled over those lines and through those stations.

Capt. ALBRO. How far back?

The CHAIRMAN. For the last year.

Capt. ALBRO. I will be glad to do that.

The CHAIRMAN. We thank you very much for the information you have given us.

Capt. ALBRO. I wish to thank the committee, on behalf of the chief signal officer, for their patience, kindness, and courtesy during the progress of this hearing.

Statement of business handled by the Washington-Alaska Military Cable & Telegraph System, fiscal year 1920.

Received from commercial messages and covered into the Treasury of the United States.....	\$189, 853. 90
Value of Government business handled if same had been charged for at commercial rates.....	380, 344. 74
Total commercial and Government business.....	570, 198. 64

ORDNANCE BUREAU.

The CHAIRMAN. We will now take up the items for the Ordnance Department. Gen. Rice is here with other officers from the Ordnance Department.

Gen. LORD. Mr. Chairman, Gen. Rice is here representing the Chief of Ordnance. He has been authorized to present to the committee an estimate to the full extent of what is presented in the Book of Estimates, subject to any modification that may be finally made by the Secretary of War. If such a modification is made I will introduce it in the record so it will be before the committee. I understand the estimate Gen. Rice will present will total something more than this total amount in the Book of Estimates and that he will make certain changes in the allocation of the amounts, increasing some of the items and reducing others.

**STATEMENTS OF COL. J. H. RICE, COL. L. B. MOODY, LIEUT. COL. O. J. GATCHELL, COL. D. M. KING, BUREAU OF ORD-
NANCE, AND BRIG. GEN. S. D. ROCKENBACH, CHIEF, TANK
CORPS.**

Col. RICE. Mr. Chairman, with the exception of the changes Gen. Lord spoke of, the estimate as submitted amounted to a total of \$13,857,000. I have divided it, for the information of the committee, into various classes and the uses to which they will be put, consolidating all of the appropriations. Under experiment and development we are asking for \$1,810,100. Of course, in each of these cases the particular details will be given under the original heading. This is merely a statement in regard to the totals. For new production we are asking \$3,771,050; for maintenance, \$2,351,850; and under ordnance service we have an estimate of \$6,424,000, which will be modified, as described by Col. King. That involves removing or not calling for an item of \$3,600,000 under Field Artillery for the Organized Militia, transferring it to Ordnance Service.

The CHAIRMAN. I understand you have quite a large surplus of that kind of material on hand?

Col. RICE. Of the material covered by this estimate?

The CHAIRMAN. Yes.

Col. RICE. We have a large amount. The estimate under this item was intended originally for tractors of a new type, to equip certain regiments of the National Guard. It was later determined that it would be better not to do that at this time. We are, of course, now supplied with very large quantities of war material of many types. We are, in the main, not asking for large appropriations for quantity production.

We are, however, very much interested in getting sufficient appropriations to carry on experimental and development work with a view of being prepared for any future emergency with a class of material which will be the equal of that of any other country.

As you know, that condition did not exist in the last war, and it would seem we should profit by the experience we have already had. During the World War there were naturally very many improvements and military suggestions made and a very great many of them were actually used. All of the foreign Governments made

changes and improvements in their material and they are still engaged in continuing work on that class of employment. For instance, we have a report from our representatives in France to the effect that only a short time ago the French authorities were engaged on some 55 experimental projects. We know that they have built some experimental artillery since the war stopped. We know they are experimenting to a great degree, even to the extent of making several different kinds of models of a gun to replace the 75. The British are operating along the same line. They are particularly active in their tank development. So we feel that one of the most important items we have, aside from maintenance, which is of course a necessity with the stores and facilities we have to be maintained, is the experimental program.

The CHAIRMAN. I would like to clear up a certain matter in connection with the National Guard. On page 57 of the bill there is a provision for arms, uniforms, equipment, and so forth, for field service of the National Guard, and the amount of the item is \$40,000,000. We understood from the officers of the Militia Bureau who testified before the committee that the Field Artillery and Coast Artillery material provided for in this estimate was on hand, or you had a surplus of it and it would be unnecessary to expend any money for that purpose. Can you tell the committee just how much of that material you have and what is the value of it, so far as it relates to the \$40,000,000 asked for?

Col. RICE. I have not the figures here on the Field Artillery, but I can say in general we have large amounts, so we see no reason why there should be any great amount of purchases for the National Guard, and the same thing applies in general to the Coast Artillery, and to practically all that class of ordnance items.

The CHAIRMAN. Then again, on page 58 there is an item for Field Artillery material for the National Guard, and the total amount asked for in the tentative draft of the bill is \$9,000,000 worth. I suppose you also have that material on hand?

Col. RICE. We have large quantities.

The CHAIRMAN. Then there is a further item for \$3,600,000 worth of material:

For the purpose of manufacturing and procuring Field Artillery material for the National Guard of the several States, Territories, and the District of Columbia.

I suppose that is also on hand?

Col. RICE. Yes, sir; we are able to do that. This seems to be merely a matter of bookkeeping.

The CHAIRMAN. Transferring it from one account to another?

Col. RICE. Yes, sir. As you know, before the war we carried both of these provisions for the reason that we did not have any Field Artillery to speak of, and if we were going to have it at all we had to manufacture it.

The CHAIRMAN. Then the committee itself is in a peculiar predicament. We appropriate for this material for the National Guard. The Committee on Appropriations in its fortifications bill carries some of the items, and also carries some of the items for the manufacture of the guns in other appropriation bills emanating from that committee?

Col. RICE. Yes, sir.

Gen. LORD. In connection with the items on page 58, beginning with the first item for the National Guard, for which the estimate is \$9,000,000, I would like to have Gen. Rice state whether or not it is necessary to retain the phraesology under these provisions of the bill.

Gen. RICE. I see no reason why it should be retained if there is not an appropriation.

The CHAIRMAN. There may come a time when you will again have an appropriation for production. Is it advisable to carry the language in the bill for the present, with a nominal appropriation of \$50 or \$100, in order to simply carry the item as it has been carried in the past and avoid the possibility of a point of order against it, should we again be called upon to make that appropriation for that purpose?

Col. RICE. What you say, Mr. Chairman, recalls to my mind what I had forgotten, and that is the difficulty in originally getting the appropriation into the bill, and I should think the language of the item should stay in the bill, with a nominal amount.

The CHAIRMAN. Colonel, we will be glad to hear what else you have to say regarding the ordnance provisions of the bill.

Col. RICE. I was speaking, Mr. Chairman, on the matter of experimental and developmental work on ordnance matériel, and I want to say that this class of work is very largely carried on by commercial firms, and at very great expense. It is as absolutely necessary with them, as it is with us. We know, for instance, that one large firm spent in 1917 \$1,099,000, and in 1918 \$1,854,000, and another expends annually about 2 per cent of the value of sales of standard equipment. There are many other cases, in some instances running up to as much as 4 per cent of sales.

The CHAIRMAN. What volume of business do those firms do?

Col. RICE. The ones that I have in mind do a tremendous volume of business. I do not care to put their names in the record.

In connection with the experimental development work, Gen. Pershing has made a report, in regard to his recent visit of inspection of various governmental establishments, including arsenals, and on coming back here is what he had to say in regard to the arsenals.

(The following is the extract referred to from Gen. Pershing's report to the Secretary of War:)

ARSENALS.

Our arsenals are now filled with stores of matériels of all classes and it is possible that additional storeroom for some few items may be needed. It should be unnecessary many years to come to expend very large sums of money for war matériel. Our manufacturing arsenals can only be kept in operation on a reduced scale, but we should always have a nucleus of personnel trained in the manufacture of purely military matériel for experimental work of all kinds, for which the most liberal appropriations should be made. While the actual development of war matériel during the World War was far greater than during any other war in history, this development was relatively small when considered in the light of the unlimited possibilities of improvement suggested by our war experience.

Failure to make ample fund available for experiment and research might jeopardize our chances of success in another war. Among possibilities, the successful development of which might almost revolutionize warfare, are tanks, motor-propelled artillery, power of artillery, and airplanes. The technical services should be provided with all the money they require for experimental purposes.

While we are on the Book of Estimates, I should like to submit for the consideration of the committee the following, which is in

regard to a matter that has many times been before the committee in regard to individual appropriations:

Hereafter the appropriations "automatic rifles" and "tanks" shall be available for two years for the purposes authorized by them.

Four of the appropriations made in this bill are two-year appropriations. At various times the other two appropriations have been made by specific legislation for the year; two-year appropriations, so I presume that there is no particular objection to that procedure, in view of the fact that it already exists in some cases, and has already been used in various cases on these two particular items.

The CHAIRMAN. Right in that connection, Colonel, of course, you readily understand what you run against when you establish a precedent. Do you not believe that if you make all these ordnance items two-year appropriations that every other branch of the Military Establishment will likewise be coming in for two-year appropriations?

Col. RICE. I should think not, no sir. Our main reason for wanting two-year appropriations is that we manufacture in very large quantities, and the great majority of our matériel is manufactured. It is almost impossible to run a manufacturing establishment on a basis of an expiring appropriation at the end of one year. There are many reasons for that. The main reasons are that sometimes the appropriations are not made until after the end of a fiscal year. I presume that is inevitable; at least we have assumed so, and it seems to be history, and whenever that occurs, if we had only an annual appropriation we would have to furlough or discharge all of our employees at our manufacturing plants. We have not been required to do that on the appropriations made by this committee up to this time, because some of them are two-year appropriations. There are many other difficulties, however, which arise out of the fact that these two appropriations are for one year.

In order to make it perfectly clear, I will say that making them two-year appropriations does not mean that they are appropriated to cover the needs of two years, of course, but if, for instance, a department project to be followed by production is slowed up, and we are unable to get the work on far enough, we can place the order, and use the money during the second year instead of the first.

The CHAIRMAN. I recall we have a provision which allows the ordnance officers to obligate certain sums even beyond the one-year period but do we make the appropriation so that the money is available for two years?

Col. RICE. No, sir. You mean in the army reorganization bill?

The CHAIRMAN. No; I mean in the appropriation bill.

Col. RICE. Of these appropriations, four of them are available for two years. The other three are available only for one year, which means that they must be obligated by contract during that fiscal year, or the money must be actually spent at the arsenals. That places the arsenals, as regards outside dealing, in a disadvantageous position. It might, in a conceivable situation, force us to buy outside when we are unable to produce in the arsenal, because at this time of the year, for instance, we could buy outside when we could not place an order with the arsenals for manufacture, because we could not complete the job between now and June 30, so that if

the appropriation is made for two years, it will be a great help to us in both of these items. If we were only getting matériel by procurement, and not by manufacture, we would not come to you with this request.

Gen. LORD. Mr. Chairman, Mr. Hull of the committee requested that I submit to the committee a provision amended from the provision carried in the reorganization bill, which gives to a contract placed by a Government agency with a Government manufacturing plant, whether arsenal or other plant, the force of an actual contract, which should be considered along with this recommendation of Col. Rice.

The CHAIRMAN. I remember the provision. It was offered by Mr. Sanford, of New York, originally.

Gen. LORD. The only amendment made in that provision, which appears on line 21, page 14, of the bill, as it passed the House, is that in the original amendment, as submitted in the bill, it read, "shall not exceed the cost if purchased in the open market," and that has been amended to read, "shall be less than the cost if purchased in the open market." That change was made at the suggestion of Mr. Hull, to protect the amendment against any point of order that might be placed against it, if the committee decided to put legislation of that character in the bill.

Mr. FIELDS. That would make it clearly a limitation, in that way, I guess.

(The provision referred to is as follows:)

He shall cause to be manufactured or produced at the Government arsenals or Government-owned factories of the United States all such supplies or articles needed by the War Department as said arsenals or Government-owned factories are capable of manufacturing or producing, provided that the cost of manufacturing or producing such articles or supplies at said arsenals or Government-owned factories shall be less than the cost, if purchased in the open market; and he shall operate or cause to be operated said arsenals or Government-owned factories economically. And all orders for manufacture of material pertaining to approved projects which are placed with arsenals or Government-owned factories or other ordnance establishments shall be considered as obligations in all respects in the same manner as provided for similar orders placed with commercial manufacturers.

Col. RICE. With your permission, Mr. Chairman, I would like to take up on page 55 the item of tanks.

The CHAIRMAN. Before you do that, I would like to ask this question. What are the two items for which you wish to have the language changed, so that the money may be available for two years?

Col. RICE. For automatic rifles and tanks.

The CHAIRMAN. That identifies them sufficiently. Now we will be glad to take up the provision for tanks.

Col. RICE. The tanks, I might say, are carried in the last bill under the heading "armored motor cars."

The CHAIRMAN. On page 55?

Col. RICE. Yes, sir; at the bottom of the page, tanks. Col. L. B. Moody, who is the head of the Tank, Tractor, and Trailer Division of the office of the Chief of Ordnance, and has charge of the detail work on that class of matériel in the Ordnance Department, will explain the details of it, and Gen. Rockenbach has kindly consented to say something in regard to it, after Col. Moody makes his statement.

The CHAIRMAN. We will be glad to hear from the colonel.

Col. MOODY. This appropriation has previously been carried under the heading "Armored motor cars," which dates back about two years before the conception of the tank, and it would seem more logical, perhaps, to change the name of the heading to make it apply in general to the vehicles that are actually being furnished; and also, unless a general provision of the type suggested by Col. Rice, to make the money appropriated for any one year applicable for two years, is adopted, I would like to include a change of wording of this particular appropriation to extend it to June 30, 1922, and the wording that we suggest is as follows:

For the purchase, manufacture, test, and repair of tanks and other self-propelled armored vehicles, to remain available until the end of the fiscal year 1922.

And, of course, this provision to make it available until the end of the fiscal year 1922 can be dropped out if a general provision is adopted.

In the matter of the amount, the total amount which has been asked for is \$1,208,000, divided as follows: \$340,000 for maintenance, \$500,000 for experimental purposes, and \$368,000 for tanks of a new type to equip a small unit of the Tank Corps for experimental purposes from a tactical standpoint, as opposed to the engineering standpoint.

The CHAIRMAN. In the new language which you quoted, so far as my ear caught it, you left out the words "and maintenance"; therefore would you not have to reword that language so that you could expend that money for maintenance? You said that after the word "repair" you wanted this new language.

Col. MOODY. Well, we have used the usual words "repair and maintenance" as practically——

The CHAIRMAN. Synonymous?

Col. MOODY. They are practically synonyms, and there has been no distinction between maintenance and repair. Who put the provision in, or how that occurred originally, I do not know, sir.

Col. RICE. We will change it, Mr. Chairman, to include maintenance.

The CHAIRMAN. I caught the reading of the proposed change in that way, so, of course, when you spoke of \$300,000 for maintenance, I wondered whether you would not have some trouble with the comptroller, if you used that amount, and did not have the words "for maintenance" in the provision.

Col. MOODY. I will modify the language.

The CHAIRMAN. We have a very technical comptroller nowadays, you must remember.

Col. MOODY. I will modify that in a note for the Secretary, as suggested by Col. Rice.

(The proposed wording of this appropriation is as follows:)

For the purchase, manufacture, test, maintenance, and repair of tanks and other self-propelled armored vehicles, to remain available until the end of the fiscal year 1922.

Col. MOODY. Gen. Rockenbach, I think, is prepared to go into some of the details of what he desires from the tactical standpoint and the standpoint of the Tank Corps, but I think I can cover by a general statement the fact that with the money appropriated last year for experimental purposes we will produce several samples, and from

those I think I may safely say a tank sufficiently up to date to meet the present requirements of the Tank Corps.

Now, the Ordnance Department has, I think, been charged in the past from time to time, and other departments, with always looking ahead, and when war breaks, not having exactly the thing wanted ready to go into production, so we propose with the money asked for to manufacture a small number, estimated from 8 to 12, to provide the Tank Corps with equipment for one platoon, which is a very small unit of their organization.

The CHAIRMAN. How many tanks are there in a platoon?

Col. MOODY. From three to five. These eight will provide really for a small company. I made an error in the organization.

The CHAIRMAN. You might put into the hearings just how many tanks are in a company, how many in a battalion, and so on. Will you do that?

Gen. ROCKENBACH. I can give you that.

The CHAIRMAN. If you kindly will.

Gen. ROCKENBACH. The light company has 26. The heavy company has 16, and they are combined into heavy battalions of 49 and light battalions of 76. Then the brigade consists of two battalions light and one battalion heavy.

Mr. GREENE. General, is that largely for administration purposes?

Gen. ROCKENBACH. No; that is for both administration and operation purposes.

Mr. GREENE. Do they operate in any sense in such mass movement, or are they more or less utilized as Artillery would be as an accompanying arm?

Gen. ROCKENBACH. When employed properly, they should always be employed en masse.

Mr. GREENE. I can understand that, as a layman's notion of it; but I supposed, from our very incidental mention of the topography and its particular objective, that they were not thrown in in a tactical organization necessarily as men might be.

Gen. ROCKENBACH. They are supposed to be a battalion. I think that is the smallest number that should be used, but of course we should be quite ready to take the front with a mass of them. They should be held in readiness near the front line, so that when brigades or regiments are held up we will have a sufficient force to operate in obtaining our objective.

Mr. GREENE. I have a clumsy way of getting at it as compared with the terminology that you people of the service would use, but as far as ordinary purposes are concerned we do not have to regard the Tank Corps as something necessary to be maintained in exact numbers of tactical units, do we? It is the gross quantity that you want of certain types and kinds, because when it comes to their use there is more or less flexibility as to the numbers or units thrown in?

Gen. ROCKENBACH. The plan I have recommended to the General Staff will explain that. We do not propose to maintain a great big Tank Corps, for the reason that it would be very difficult. The men go out very quickly, and, in addition, it is very expensive, so we are attempting to maintain a nucleus; that is, one battalion of tanks for a division for training. When you want to employ them, those battalions would be taken by the corps or Army commander, under the orders of the War Department, and moved near the front that

you are going to use them on, and there they would be used in quite large masses; but all we are talking of now is simply a nucleus force, you might say, for training, which would be expanded in time of war.

I think now, for instance, the present plan is to have seven organized divisions; that is, seven battalions of tanks. We have a battalion at Benning, where a division school, called the infantry school, is established. That makes a total of eight battalions that we want to keep for training as the permanent organization.

The only additional thing to that is our tank special service school, which will be the only thing left eventually at Camp Meade.

The CHAIRMAN. You are in practically the same position as the air force. You want so many tanks. You will divide them up into tactical units. My purpose in asking how many there were in a company or a battalion was simply for the information of the members of the committee. We know that what you want is the total number and then you will properly divide them up for use for your training purposes.

Gen. ROCKENBACH. But our thought is that seven divisions will be based on this minimum. If we get 10 divisions, the authority for those 10 divisions should also carry with it the authority to increase by two battalions of tanks.

Mr. GREENE. That is just what I want to get to. You see, as far as we are concerned here, what the tactical employment of the tanks may be is a matter that might just as well be over in Egypt. The gross quantity and their cost, and just what proportion might seem to be the requisite peace-time equipment, and what its relation might seem to be in any projected plan of national defense that the military establishment is now considering in any way, is what we are concerned in, but if you begin to employ these technical terms, with the suggestion that it is only the beginning of a growth, it leads us to imagine that once we start out with a battalion here we are establishing a standard which must, with every equivalent unit, or every unit of a certain type in the tactical organization of troops, be accompanied by such and such a tactical organization of tanks, and we see ourselves in the beginning of an amplified, constantly growing tank program.

Gen. ROCKENBACH. I do not think that follows from what we are going to say to-day, because we certainly are not going beyond a year or two years, unless we are at war.

Mr. GREENE. That is just what I wanted to find out. You gentlemen of the service apparently seem to understand the growth of these things. We saw the time not so long ago when we talked of artillery in batteries, and when they would say that they would send some one's battery over here to take care of this thing, but now you do not talk of it in anything less than a city full.

Mr. McKENZIE. Is it not a fact that the mechanism of a tank is very simple, and that it is not more involved, as a matter of fact, than the pressed-steel car?*

Gen. ROCKENBACH. We hope to get it so that it will be as simple as manufacturing a pressed-steel car. At the present time it is a machine 30 feet long, and, roughly, 6 feet wide, and 4 feet high, which is filled up entirely with mechanism.

The CHAIRMAN. That is the large tank?

Gen. ROCKENBACH. That is the large tank.

Mr. McKENZIE. Now, if you have the blue prints, plans, and specifications for a tank, and you turn those over to any boiler works in the country, they could turn out tanks pretty rapidly, could they not?

Gen. ROCKENBACH. I do not think so. I was in Hoboken with a man a few days ago who was manufacturing a tank—that is, last month—and I suggested a change which would enable us to put the plates rapidly into production. He was making it out of five pieces. I suggested that he make them out of two, and we went over what would be necessary to do that. He spent two weeks in drawing his designs, and a month later he had his jigs and tools made especially for that, and he was producing a two-piece tank plate, but he had spent \$2,400 in doing it and nearly a month's time. When we get those two and when we get the pilot and when we get into production, then we can produce rapidly.

Mr. McKENZIE. General, I think you are to be commended for making that very wise suggestion, because that leads to economy. One difficulty about a good deal of this manufacturing business seems to be to not make it as simple as possible, but as complicated and as difficult as possible. I do not say that is true, but that is the way it appears to one in listening to the discussion.

For instance, in regard to the manufacture of an airplane, thousands of pieces are necessary to go into it, and naturally it is a complicated thing, but an iron tank on wheels does seem to me a very simple piece of mechanism, so far as the tank itself is concerned, and I should think that it could be put into mass production, and you could have all the tanks that you would need in a very short time, if found necessary, and that all you really need, so far as a peacetime proposition is concerned, is a sufficient number to use for training. Am I right?

Gen. ROCKENBACH. I think we will bring that out in explaining the object of this. That is what I had in mind.

Mr. McKENZIE. In other words, it is not necessary to carry a reserve of tanks? That is what I mean. I can see the necessity of a good safe reserve of machine guns, but I can not see—

Gen. ROCKENBACH. My recommendation to the General Staff, on my return, was to put all of the tanks that we have on hand into readiness for battle, so as to have something to start to fight with, and then to allot all the time, energy, and money that we could to an improved machine, and along with that machine all the tools and jigs that were necessary to produce it rapidly. We do not propose to build any large number of improved tanks more than enough to give them a test.

The CHAIRMAN. Right along that line, one of the difficulties that confronts the country, if we want to produce in great quantities, is the fact that we do not have sets of tools, jigs, gauges, and dies. Now, you said that this manufacturer will produce your two-piece tank. Will you retain possession of those jigs and tools and dies; will they belong to the Government, and will the Government make additional sets, so that if we get into war the tools can be distributed among the various factories, where the tanks would be produced in great numbers?

Col. MOODY. In every case where we make a contract we retain control of the tools, and usually by Government ownership place them in storage. We have retrieved as far as possible all the tools,

or at least an ample number of the tools that were constructed during this war, so that if another emergency requiring manufacture should arise within the next few years, we could pass these tools out to various manufacturers, and say, "These tools are used for making a certain piece," etc., but as for providing sufficient sets of tools to produce in quantity, even in a single factory, is a very expensive proposition. We have retained, as far as we can find out, all sets of tools to make a single tank of the type used during this war, which was the Americanized Renault type, which is small and as simple as anything likely to be produced in the future. One set of those tools for a single factory would be easily worth \$300,000, so that if you began to store up tools for three or four factories before the emergency arose, it would be a very expensive proposition, but in connection with the experimental manufacture we do require a limited amount of tools, and those would be very carefully preserved. That is, if these 8 or 10 tanks, which are of a new type, which are being suggested, should be manufactured some few of the more difficult dies, etc., would be retained, but as for the rest of it, it would be cheaper to just make them by hand instead of making the dies, so that a few tools would result, but not enough to be considered as a real reserve, and no money is being asked under this appropriation for that purpose.

Mr. McKENZIE. But, after all, is it not an element, and one of the strongest elements, of real preparedness to manufacture a whole lot of tanks, for example, or guns, and then in a few years declare them obsolete and start in and change the pattern a little bit and manufacture a few more, and so on? It seems to me that that is the very essence of preparedness to have these jigs and dies and gauges laid away, not perhaps the last word in any branch of military equipment, but yet of a character that would make a good fighting arm.

Col. MOODY. There are a number of steps in reaching an ideal, which I would suggest. The first is to make drawings of a vehicle, or whatever the article is, and make a single one of them, and try it out and get an idea that is satisfactory from an engineering standpoint, but that vehicle or article which is satisfactory to the engineer very frequently is not satisfactory to the user. That applies, of course, to commercial life as well as the military end.

The next step is to convince the user that the thing is all right, and for that purpose it has been suggested this year that 8 or 10 vehicles of a new model shall be constructed and turned over to Gen. Rockenbach for test. If Gen. Rockenbach agrees that it is reasonably satisfactory for his purposes, and if the Ordnance Department is reasonably satisfied from a production standpoint, we have reached that point.

Now, then, the next step would be to manufacture sufficient tools to provide for one or two or three factories, or whatever might be necessary for the estimated war needs, but that would require additional money from Congress, which is not being asked for.

The CHAIRMAN. Right along that line, when this war started, the European countries did not have a sufficient number of rifles. They came to the manufacturers of this country and made contracts with them for the production of rifles. It took the American manufacturers 13 months before they were able to turn out a single rifle, because England did not have the jigs, the tools, the gauges, and the

dies that were required for making those necessary arms. If we have no extra tools, gauges, etc., and if war should again break out, it will take months for the manufacturers of this country to secure the necessary jigs, dies, and tools, and a great deal of time will be lost in putting the country into a condition of defense.

Now that is what the committee has in mind. We hope never again to be caught in that way, and that is why we are asking these questions.

Col. RICE. We are doing that with all the standard material that we manufactured during the war. We have in the office of the Chief of Manufacture, one section whose sole business is to look out for gauges, jigs, and tools for the manufacture of the standard equipment, and we have a considerable force of men at the arsenals engaged on nothing else. They are taking care of them, cleaning them, cataloguing them, and making up process data, and in many cases we have a complete set of photographs on how they were used, what kinds of machines were used, and all that.

That applies to the tank problem, for the standard jigs we now have, as well as anything else. Of course, in this appropriation for tanks we are asking for it is not included, because we have not yet gotten to that stage and will not until we are able to use for development the money we are now asking for.

The CHAIRMAN. Until you standardize the tank that you want to use?

Col. RICE. Exactly.

The CHAIRMAN. I think you have made a great advance when you are doing that work.

Mr. GREENE. That very phrase, "until you standardize," suggests to me some of the experiences that we are all familiar with here, and that is that we were said to be waiting for the 100 per cent gun, you know, before we got any. Are we in such a position now, or do you contemplate at the present time to be in such a position that we might at least get some guns, or some other utilities of war that we could recognize as not being 100 per cent, perhaps, and that we are seeking even now to improve, but that we will get them anyway? Are you laying away, in other words, your jigs, gauges, and tools for the last thing made, that you may hereafter want to improve?

Col. RICE. We are, and we are in my office just getting started on making what we call a standard list, a list of standard equipment—that is, equipment which is of the present adopted standard—of which we have the drawings, the specifications, the manufacturing facilities, jigs, tools, etc., all ready to use.

Now, if we go to war any time in the near future, it would be the policy of the Chief of Ordnance to use these things, or such as would be necessary to manufacture in the beginning. When a new type develops that has been tried in the service in small quantities and proved satisfactory, the drawings are completed, and there would be enough production so that we would know how to go into quantity production without some of the delays which nearly ruined us last time, and then only will we put them on our list as the standard for new production and then we would have the drawings listed and catalogued, the specifications catalogued, and the whole proposition lined up so that we could go right to work on it before we would recommend its adoption as a standard. Does that answer your question?

Mr. GREENE. Exactly, because it is some weapon of some kind, rather than waiting for the ideal weapon.

Col. RICE. I think you will find nobody in the Ordnance Department who went through the last three years who is inclined to wait for something that is perfect before getting something that we can use.

The CHAIRMAN. We desire to congratulate the Ordnance Department for having learned this important lesson of the World War.

Mr. GREENE. Is the structure of the tank itself in any of its parts so complicated that its manufacture is retarded by its having any delicate adjustment or any complication in its structural parts?

Col. MOODY. The mechanism is essentially that of a tractor of a good type. Of the military features this war has shown that the hardest one to get is armor plate. Armor plate will not do for anything commercial. In fact the particular kind of armor plate used on tanks will be in practically no production in peace times, except possibly experimentally, and the armor plate is subject to a great many kinks, warps, etc., that made it difficult to fit the machinery inside of the tanks designed and built during the war, and any new design will be such that the armor plate can be bolted or fitted together in the same way that any other iron structure is put together without any great care, and the machinery fitted in or set in on brackets, or something of that sort, so that even though the body is out of line we can put it in with very little trouble. One of the models we had in this war copied from the French had armor plate running right through the center of the transmission, with some gears on one side of the plate and some on the other, and these gears had to mesh up, and you can well understand the difficulty a man had to fit them up with those plates warped. In the new designs we will avoid anything like that, and it will be a jig, die, and tool proposition.

Mr. GREENE. Would you mind, Colonel, unless you are going right to this matter, allowing me to interrupt again there? To a lay mind, which is what I am trying to get at, so that we fellows who do not operate these things may know what it means, it reduces itself to these more or less simple terms. The complicated part of your tanks is what we call the running gear?

Col. MOODY. Yes, sir.

Mr. GREENE. And the power house above, and you intend making the samples of such a simple structural design that it would be more or less of a rough hand job for emergency purposes?

Col. MOODY. Yes, sir.

Mr. GREENE. And then the delay, if any, comes in the careful work necessary on the tractor part?

Col. MOODY. And also on the armor plate.

Mr. GREENE. And the armor plate.

Mr. MOODY. Yes; those two parts; and as far as the tractor parts are concerned, every effort is being made so that if there is anything on the commercial market in the line of engines, of differentials, and bolts, nuts, and cotter pins, and all of those things that are approved by the Society of Automotive Engineers, we will not put in parts of any special design if it is possible to get something that is actually in commercial production.

Mr. GREENE. I am glad you referred to that. It would seem as if the knockabout, rough-and-ready experience of the farmers with

these tractors for a series of years would, to some degree at least, be analogous to what your demands would necessitate, and by keeping back of the commercial side of the development in that way you might so standardize those parts that they would be easily interchangeable with a commercial tractor.

Col. MOODY. We are doing that, and in order to be sure that we are cooperating with the commercial people the Society of Automotive Engineers has appointed a committee, known as the ordnance advisory committee, of the very highest class of men they have. In fact, I believe there are seven members of the committee, five of whom are past presidents of the Society of Automotive Engineers, and these gentlemen are meeting with us every two months, and they are a class of men it would be absolutely impossible for the Government to hire for money, but, as a matter of patriotic interest, they are giving their service for nothing every two months and meeting with us to go over all these new things, or anything we approve and adopt, to see what we call for in our drawings for possible use in war is really produceable by the men who would have to produce it; and incidentally their engineering advice is well-nigh invaluable, because unless they gave it to us freely we simply could not get it.

Mr. McKENZIE. When you spoke of a dozen models, Colonel, you did not mean a dozen different kinds of models of tanks, did you?

Col. MOODY. No, sir.

Mr. McKENZIE. Early in your testimony you spoke about the appropriation here giving you at least a dozen models.

Col. MOODY. No, sir. I may not have said what I meant. We will produce with the funds that have been appropriated two or three models, all of which meet the requirements of the Tank Corps. One model runs on an ordinary caterpillar track, and one is capable of running either on wheels or on a track. Within the next few months we expect from these two or three models that the Tank Corps will select the best, and then we expect to make enough of those to try them out from a tactical standpoint, so that the 8 or 10 which we suggested would probably be of the same, or, at most, of two different types.

Mr. McKENZIE. While I am not an admirer particularly of Henry Ford, there is one thing that he has demonstrated, and that is a certain standard which is practically the last word in that character of car. He makes the little Ford, which is laughed at and made fun of, and all that, but, after all, it has stood up as the one car in the United States that will answer every purpose, and it lasts because of its popularity. They do not try to beautify it, or anything of that sort. And that is what I had in mind in asking you about what you were trying to develop, whether you were making a dozen different models, or whether you were having a dozen machines made of a certain model.

In other words, what I have in mind is the concentration on one particular model, and sticking to it, and not being led astray by every man who comes along and says, "I have put this side gear on, or this on, or something else." What you want is a tank, with boiler plate, or, as you say, this armor plate, with a good engine in it and a gun or two on it. It is not a thing of beauty, but a practical weapon, and it seems to me that it could be standardized without very much expense.

Col. MOODY. That was the idea of the Tank Corps, as I understand it, to attempt to develop for use in whatever future emergency may arise, a single type of vehicle which will do the work of the two standard types, one small and one large, which they now have, and some miscellaneous other tanks left over from the war, and that is what they are aiming at, one type of vehicle to do all the work, and we hope that that can be achieved, and, as I understand it, Gen. Rockenbach, or any other chief of a combat service, whoever he may be, when the next war comes, will be perfectly satisfied to use some one particular type of vehicle for a given purpose but we would like to have a few of them to equip a battery or some other small unit, to actually try the type before we would put our final O. K. on it. I think Gen. Rockenbach will elaborate on that, but that is my idea of what I have understood they are driving at.

Mr. MCKENZIE. Do you make these tanks at the Government arsenals?

Col. MOODY. We probably would make them at the Government arsenals, unless we could not complete them before the money expired.

The CHAIRMAN. The general stated a few minutes ago that he had been negotiating with a private manufacturer for the production of a two-plate tank.

Gen. ROCKENBACH. Not negotiating, but consulting.

The CHAIRMAN. I beg your pardon.

Col. MOODY. I might say, Mr. Chairman, that with the experimental money which has been appropriated this year, we would have liked to have placed some of the work at the arsenals, but we have practically been forced to call for bids, or let contracts outside, on account of the fact that we are authorized to obligate the money by law. But now we are just ready to go ahead and make some of the experimental designs that we wanted to make with this amount of money, and it is perfectly legal to obligate it, but if we put it in an arsenal, the money will expire on June 30, and we will have to stop right in the middle.

Mr. MCKENZIE. So that when you are manufacturing at an arsenal, you can not obligate, whereas, you can obligate with a private manufacturer, is that it?

Col. MOODY. Yes, sir; and that is an excellent example of why we would like to have the arsenals on the same footing as a private manufacturer.

Mr. HULL. The wording in the permanent reorganization bill covers that?

Col. MOODY. If any one of these new wordings are adopted, it would, I think, take care of the case.

Mr. HULL. If you put that on this bill, that would cover it.

Col. RICE. Mr. Hull, Gen. Lord put the wording in that would cover it.

Mr. MCKENZIE. Here is the idea I had in asking the question. You have now in the Government arsenals a very large force of civilian employees, men who are skilled workmen, and they certainly do not need to make very many rifles this coming year, or perhaps the next year, or for many years. There are many things that are produced in the arsenals of which we have a great supply, and naturally we have either got to utilize those men in some other

activity, or we have got to let them go. That being true, I had in mind the advisability of having this experimentation that we are going to do along the line of tanks done in our arsenals.

Col. RICE. We expect to do it. As far as the appropriations will permit, and our facilities will permit, we expect to do it in the arsenals.

The CHAIRMAN. Can the Government supply its own armor plate, or would we have to go into the market and buy it?

Col. RICE. No, sir; we would have to buy it.

Mr. GREENE. Can we not buy some of the armor plate from the Navy?

Col. RICE. They do not manufacture armor plate of the thickness that we need for our work.

Mr. GREENE. How thick do they manufacture any?

Col. RICE. I do not know how thick the Navy's armor plate is, but the plate that we use on the tanks is thinner than that which they manufacture. There are certain things about a tank, of course, that we would have to purchase. We do not manufacture any automobile engines, and ought not to, with any of our present demands. We do not manufacture armor, and we do not expect to take it up. But there is the work of assembly, and a majority of the work of that type that we would like to do at the arsenals.

The CHAIRMAN. You may continue, Colonel.

Col. RICE. Did you wish any further information in detail about this item?

The CHAIRMAN. No; I do not think it is necessary. We would like to hear from Gen. Rockenbach.

Gen. ROCKENBACH. I do not know, Mr. Chairman, that I can clear that up any. I think every question nearly has been asked that has been anticipated in regard to what we are providing for. Of course, the maintenance item is for the purpose of maintenance and repair, to keep the machines that we have in readiness to operate with. We could now put out the number of tanks in battle condition that we would have troops for, say, for six months.

Now, then, the additional part of this is that when we came back we had to take steps that we could not during the war. When we came back I think we claimed to know what we wanted. We have standardized ideas on tanks. The development of a design has gone ahead to such an extent that we can in a very short time revolutionize the tank. In other words, the machine that we ought to get in a couple of months is certainly equal to any five of the Mark VIII that we have. In that machine, as Col. Moody has stated, there is an absolute separation of the running parts from the armor.

There has been a great improvement in the guns. It is a safer tank for the crew, and we propose to build a sufficiently good machine to go across country at the rate of 12 or more miles an hour. It, of course, can run faster on the road, and one type that is proposed, by taking off the tractor, will run at the rate of a truck on a concrete or macadam road.

Now, taking the case of the Renault, we sent in the latter part of November, 1917, from France, not only the drawings and plans of the Renault, but we sent a Renault tank over here. It took nearly a year, I might say, after we got the pilots to put that machine into production, because we did not have tools, jigs, and so on.

Now we are asking for the money for experimentation in designs, and the construction of a reasonable number. I hope to be able to manufacture of any new type at least 12 for the try out.

When we get that machine, I fully believe that a year after we put the improved tank into production, that the greatest investment to the United States is going to be the cross-country automobile. Take the situation of the whole country. For three months the farmer has been cut off from the world, unless he lives on a highway. At Camp Meade, which is only 7 miles from the Washington-Baltimore pike, for two months no machine went over it. Any machine that went over that road we pulled out by means of a tractor.

The CHAIRMAN. They were using tank tractors in Newark, N. J., and some of the other cities between here and New York, and they used them even in New York, I am told, to make a road for the automobiles to go through during that blizzard.

Gen. ROCKENBACH. Now, we will advance very decidedly on this thing that is in existence right now. The vehicle that is going to be suitable for the Army is going to be suitable for all other purposes. There is no wheel transportation that will cross a battle field. It did not do it in France, and it did not do it on the front, and motor transportation trial across country demonstrated in Colorado, Nevada, and Utah that wheel transportation could not be relied on. I have directed all the attention of the Tank Corps not to the idea of getting a combined vehicle, but to improve the track idea, to get a fast tractor and to get a durable tractor. The tank as it stands now has got a life of about 400 hours, and then you have got to take it out and do a great deal of repair on it. It is not, of course, entirely worn out, but many of its parts have got to be replaced.

I have no hesitancy in saying that the Tank Corps for the Army is going to develop a first-class fighting tank. I would like for you to keep in mind that it is not the armor and it is not the gun in a tank that makes a tank the best tank, but it is the machine that will best get to the enemy. We are a close-up fighting corps, and the machine to be suitable must take us right up to the enemy.

Now, when we get a machine that can do that for us and do it at 12 miles or more per hour, our chances of destruction are light; and, by the way, if you happen to meet the 16 of our men who were in tanks that got struck by artillery, you have met all that were in tanks that got direct hits out of the 417 that we had in battle.

The CHAIRMAN. How many men do you have in a tank? I have heard it stated that the usual unit was three men in a tank.

Gen. ROCKENBACH. The Renault tank will only hold two men; that is the old tank, the commander, who is also the gunner, and the pilot. The Mark 8 tank holds 11 men, with two 6-pound guns and five machine guns.

Going back to this improved tractor, as soon as I get the ideal tank, the commercial value, I believe, is going to be so enormous that I have absolutely no doubt that a year from the time that I produce an ideal tank the transportation of this country is going to be revolutionized. You know we have got States where there are few roads. An automobile is an awfully fine machine and very valuable, and we could hardly do without it, but when you think of the billion dollars that you spend on roadways, it makes it very expensive. As I say, both for the Army and for the country the

big thing of the Tank Corps is going to be the development of the tractor. We are going to have a durable tractor and a fast tractor, on which we place the top and make a tank out of it.

Mr. McKENZIE. I am interested in your statement about the increasing speed of these tanks, but of course a tank is considered as an Infantry arm and will be supported by the Infantry. Now, if you increase the speed to 12 miles an hour, of course you would give up the idea of supporting the tanks with Infantry, would you not?

Gen. ROCKENBACH. Not at all, sir.

Mr. McKENZIE. And leave the tank to fight alone?

Gen. ROCKENBACH. It is just the other way. You know we attempt to train our Infantry up to the physical condition where they can fight very nearly all day long and usually about dusk make the supreme effort and double time across the machine gun and artillery swept zone. Now, tanks start out the first thing in the morning, when the enemy is all alert and is all primed. We can not start closer than 500 yards. If you have got to go across that 500 yards at the rate of 3 miles an hour and making a terrific rattle, you would think that it is asking a good deal of a man, but the men in the tanks did not really think so.

Now, I propose to jump that 500 or 600 yards in a minute. You can see the difference in time that I have got there.

Take St. Mihiel. It is not commonly known that that attack was considered so difficult that you could not make it. The losses would have been greater than the United States or any other Nation could have stood, so the allied command had allowed 150 British tanks, 150 French tanks with Frenchmen, and 150 with Americans; it was supposed we could not make that attack without those machines. We did not get them, the British heavy. The British, of course, could not supply them, but the great thing was that we had the idea that we were going to get them. We got up as close as we could to that line, which in a few places was 100 yards away.

Now, you can imagine what my feeling was in seeing these small machines, with the men that I had spent a year on in training. It just simply seemed as if they were crawling. Then another thing is that the trenches were so deep and my mechanism was so defective that in one hour I ditched 60 per cent. I think I ditched 200 machines on account of the mechanical defects. Now, I am back, and we are trying to get something that will take those men over quickly, and feel sure that they will go over. We do not want to go up to the enemy's artillery fire, and then have the mechanism break down.

The CHAIRMAN. General, did you happen to run across any of the German circulars that were distributed among the German troops that went on to say that the infantryman ought not to be afraid of the tanks; that they can go no faster than the infantry soldier; that he can get out of the way of them very easily; and that in order to put them out of business he ought to wait until they come within range of his rifle and then let the tank have it as it reared upward? I think it referred especially to the slowness of the oncoming tank. Did you see any of those?

Gen. ROCKENBACH. Yes, sir; I captured some of those, and I recall the replies that were made by some of the prisoners. I particularly remember the statement in the circular that there was no armor on the bottom of the tanks and that all they had to do was to

wait until they reared up and shoot the bottom. The prisoners that were captured on the first day stated that they carried out that circular and stood their ground and fired their rifles, but that the tanks paid no attention to them, but rolled them over and pressed them out like flat irons. It is a fact that they actually held their ground until they were run over.

Mr. HULL. I just want to ask the general about this development of a fast tractor. The Artillery is trying to do the same thing, are they not, for the 75's.

Gen. ROCKENBACH. They are working right on the same line.

Mr. HULL. Are you working together on the same line?

Gen. ROCKENBACH. Yes. As I say, the Tank Corps is compelled to be a small part of the Army. It is a necessary adjunct on suitable ground, it is very valuable, but the big idea of it is, if it is developed properly, is its value for the other branches of the service, the Artillery and Motor Transport Corps, and then, as I say, you know the condition of the farmer in a great part of the country. He is cut off from all communication three months in the year, and he will have a machine which will take him across the country, and at the same time do his plowing.

Mr. HULL. As I understand, the reason they are motorizing the 75's, is that they have no carriage that is fast enough.

Gen. ROCKENBACH. We will have one fast enough in a month.

The CHAIRMAN. Is there anything further you desire to say?

Gen. ROCKENBACH. I would like to make this positively clear so that the committee will clearly understand what we are working on. I must not only get the type of machine that I want, that is the first one of the type, but then I must get enough of those machines to have them actually tried out by the troops that are going to employ them.

The CHAIRMAN. I think the committee understands the situation clearly. You have explained it very clearly. We are very much obliged to you. Is there anything further on that item?

Col. RICE. No, sir.

The CHAIRMAN. Which item do you want to take up next?

Col. RICE. Col. Gatchell can give you a brief statement in regard to the estimated condition of the funds returned to the Treasury, so far as they pertain to this bill, and so far as they pertain to the whole ordnance appropriations. I do not know whether the committee cares to have that or not.

The CHAIRMAN. It will not take up very much time?

Col. GATCHELL. I will be very brief, sir. Mr. Chairman, it is assumed that what the committee most desires is a brief statement as to what funds we have on hand, the amount of these funds that will be expended, and how much of a surplus will be returned to the Treasury. The figures which I will submit are totals for the appropriations contained in this bill. I have the figures separately by appropriation titles, if the committee desires. The figures are based on our status as of January 15, 1920. The Treasury balance on that date was \$411,117,059.73. Our expected expenditures subsequent to that date amount to \$170,082,083.18. These include the amount to be spent on claims, on old contracts incurred prior to the armistice, on our current work in the operation of the salvage board, and district offices, and on our maintenance work, and during

the fiscal year 1921, from our two-year appropriations, the amount that will be left over. I have the figures for the various items on that, if the committee desires them.

In respect to the surplus we will have, we have been confronted with a difficulty, due to the cancellation of contracts and in the settlement of claims. We have, however, just completed a careful study of the situation, and by revocation of the outstanding allotments, as claims and contracts are settled, we expect to have a surplus when we get through, from the appropriations in this bill, of approximately \$241,000,000. That is an estimate, of course, but we believe it is at least conservative. Of this amount we have approximately \$100,000,000 clear on our books. I might add that that applies to this bill only, as I have stated, but that in our appropriations in the fortification act, a similar estimate shows a surplus to be turned in of approximately \$793,000,000.

Mr. McKENZIE. Which, I understand, you will turn back into the Treasury on July 1 of this year?

Col. GATCHELL. On July 1, or shortly thereafter.

The CHAIRMAN. That represents the balances from lump sum appropriations that were made for war purposes?

Col. GATCHELL. Yes, sir; these are the balances which were allotted on contracts, but when the armistice was signed very radical cancellations of contracts were made. It has been impossible for us to accurately determine the amount which could be returned until claims and things of that kind were settled up. This is the amount that we expect to have left over when all the claims are settled and all expenditures are made on our current work.

The CHAIRMAN. About how many claims are still pending against the Ordnance Department.

Col. GATCHELL. I think I can answer practically none. The claims, are, I understand, all submitted, and a very large percentage of them have been passed on.

The CHAIRMAN. And adjusted?

Col. GATCHELL. Yes, sir; and adjusted, subject to final adjustment here in Washington, and in practically every case where there is a final adjustment in Washington, the claim is reduced. It is very seldom that it is increased, so that taking into consideration these claims the cases which have not been adjusted, I have taken the claims as submitted by the contractor, so the expenditure should be the outside figure.

The CHAIRMAN. And possibly you will be able to save more than you have indicated to the committee?

Col. GATCHELL. Very possibly; yes, sir.

Mr. McKENZIE. Does your statement include all claims arising out of informal contracts and formal contracts?

Col. GATCHELL. That includes informal claims as well as formal.

Mr. McKENZIE. Everything?

Col. GATCHELL. Everything; yes, sir.

Mr. McKENZIE. How many civilian employees do you have in your branch of the service at this time engaged in the settlement of these claims, or do you know, or does any officer know?

Col. GATCHELL. I do not know, sir. I could very readily obtain those figures.

Col. RICE. We will be glad to put it in the record.

The matter referred to follows:

There are 894 civilian employees in Washington and in the field engaged on work pertaining to Ordnance claims.

Mr. McKENZIE. I will just ask the Colonel a question right on that point. In view of the statement suggested by Col. Gatchell, will it be necessary for you after July 1 next, to carry as a part of your force any civilian employees to assist the officers in the Ordnance Department in making settlement of claims?

Col. GATCHELL. The claims situation, Mr. McKenzie, has been taken from the control of the Ordnance Department, and is in what is known as the War Department Claims Board. We have no jurisdiction over that, but it is my understanding that their work is going to be very largely completed by the 1st of July.

Mr. McKENZIE. If there are any remaining claims growing out of ordnance which are not settled by the 1st of July, do you feel that you have officers in the Ordnance Department who would be competent to make a settlement of or adjust those claims in case we do not have any civilians to do it?

Col. RICE. No, sir; we would need civilians. If they still have claims to be settled after the 1st of July, some civilian employees would undoubtedly be necessary.

The CHAIRMAN. But you could get the assistance of the Judge Advocate General's Department?

Col. RICE. You refer to high-priced lawyers and people of that kind? I was thinking of the clerical help more than of the other.

Mr. McKENZIE. Of course, General, what we are trying to get at on this committee is to get rid of these auxiliary bodies that have been fastened on to the Military Establishment. We were willing to stand for them at a time when we knew that the officers in the Army during the period of demobilization were undergoing great responsibilities and duties, and I think that they probably did need some assistance along those lines, but now, with the 1st of July, with a new law going into effect giving you about 16,000 or 17,000 permanent officers, we believe that there ought to be men in all of these departments who would be competent to guard the Government's interest in the settlement of any claim that might remain unsettled at that time.

Col. RICE. We are hoping that every item of claim will be out of the way by the 30th of June.

The CHAIRMAN. Along that line, you have been selling considerable surplus ordnance material, have you not?

Col. RICE. Yes, sir.

The CHAIRMAN. Did you sell that material through the Director of Sales?

Col. RICE. On the surplus material, Mr. Chairman, I will ask Col. Shurtleff to answer any questions you want. He is at the head of the salvage board of the Ordnance Department, and I think you are going to appear in connection with the Ordnance Service, are you not, Col. Shurtleff?

Col. SHURTLEFF. Yes.

Col. RICE. That will be discussed at length between Col. King and Col. Shurtleff on the next item, unless you care to follow it up now.

The CHAIRMAN. I will wait until the next item. I wanted to see how much work you have been doing to sell this material, how much

money it has been costing you; whether you have found customers for the material, and found the market values of the material; and whether the Sales Division simply did a perfunctory work after it had all been prepared by the employees of the Ordnance Department.

Col. RICE. We have that all in the next item.

The CHAIRMAN. Very well, I will be very glad to hear you when we get to that.

Col. RICE. We desired to furnish for the record this financial statement by Col. Gatchell, which I thought would probably interest the committee because of the probable balances.

The CHAIRMAN. It is exceedingly interesting.

Col. RICE. Col. King will take up the next item, which is on page 52, "Ordnance Service."

Col. KING. The estimate appearing under the item "Ordnance Service"—that is, \$2,824,000—is very considerably less than the Ordnance Department's estimate.

The following are some of the reasons why the estimate of \$2,824,000 for "Ordnance Service, 1921," page 387, document No. 411, letter from the Secretary of the Treasury, transmitting estimates for appropriations required for the service for the fiscal year ending June 30, 1921, should not be reduced but should be increased.

You will note that the wording in this book is different from what it is in the Book of Estimates and what we wanted. The wording under "Ordnance Service" should be as follows:

For the current expenses of the Ordnance Department in connection with purchasing, receiving, storing, and issuing ordnance and ordnance stores, comprising police and office duties, rents, tolls, fuel, light, water, and advertising, stationery, typewriters, and adding machines, including their exchange, and office furniture, tools, and instruments of service; for incidental expenses of the Ordnance Service and those attending practical trials and tests of ordnance, small arms, and other ordnance stores; for instruction purposes; for publications for libraries of the Ordnance Department, including the Ordnance Office; for membership dues of the Ordnance Department in scientific and technical societies and associations and for payment of mileage to officers and employees ordered to attend meetings or conventions of such societies and associations; subscriptions to periodicals, which may be paid for in advance; and payment for mechanical labor in the office of the Chief of Ordnance; and for maintenance, repair, and operation of motor-propelled or horse-drawn passenger-carrying vehicles.

The underscoring indicates additional wording desired to be incorporated in the wording of "Ordnance Service."

Col. RUGGLES. May I interrupt a moment there?

The CHAIRMAN. Yes.

Col. RUGGLES. I want to make a special plea for the new language which is intended to allow the Ordnance Department to take out memberships in engineering and scientific societies. It is prevented by existing law unless some appropriation carries the specific authority for it. Last year we asked for that authority, Mr. Chairman, but it was not inserted. We regard that as a very essential item in preparedness.

We have throughout the country a large number of engineers who served in the Ordnance Department during the war—5,000 or 6,000—and we have, of course, the manufacturers and engineers who made munitions during the war. These men are all members of engineering and scientific societies, and one of the greatest problems before the Ordnance Department is how, without the expenditure of large sums of money for production, we can keep these men always in touch with our ordnance work, so that they will know what they will

be called on to manufacture in case of war, and so that they can suggest to us what plans they and we can work on to keep the country prepared to engage in a large production program. Some of them are keeping in touch with us through patriotic motives, such as the committee of the Society of Automotive Engineers, which was spoken of this morning as having been appointed to advise with us, but we can only get a few people to do this, relatively. But through these engineering and scientific societies, where manufacturers and engineers meet and discuss their difficulties, if the Ordnance Department can join these societies and have ordnance sections therein, we can, through these sections, have our drawings, our plans, and our difficulties discussed by the engineers and ourselves in the meetings, and, through the publication of minutes of those meetings, which are sent all over the country, we can present such problems as how best to utilize all the manufacturing facilities of this country when war comes, and we can find out from engineers and manufacturers just what shops are best prepared to take up certain classes of manufacture. In no other way can the Ordnance Department ever get so good a liaison with the manufacturing and engineering interests of this country in the general problem of munitions preparedness as through these societies.

These societies issue what are called corporation memberships. They will issue a membership, for example, to the Steel Corporation, and the Steel Corporation is entitled to send so many men to attend these meetings. We want that kind of membership.

The CHAIRMAN. How much money out of this total will that involve?

Col. RUGGLES. I should imagine that the outside figure would be \$5,000. We have not estimated for it particularly, because we considered that the difficulty of making a close estimate for the many larger projects that we have to handle is such that our natural factor of safety will more than cover any small expense that will be attached to this proposition.

The CHAIRMAN. How many such societies are there?

Col. RUGGLES. We would probably join perhaps 30, I should suppose. Of course, that would cover the payment of mileage expenses to officers, engineers, and employees of the Ordnance Department. Among the most prominent societies would be the Society of Mechanical Engineers, the Society of Electrical Engineers, of Chemical Engineers, the Society of Automotive Engineers, the American Society for Testing Materials, the Society of Mining Engineers, and so on, and the scientific societies and mathematical societies in connection with ballistic work. They have the best talent in the country in those societies, and they spread their literature throughout the country, and they call upon people all through the country for their ideas, and for the discussion of subjects.

The CHAIRMAN. Well, this provision, if adopted, will enable the Ordnance Department to keep in touch with the civilian engineers in the various branches of science, so as to take advantage of the newer things in the respective lines of the various organizations you propose to join?

Col. RUGGLES. Exactly, and these societies have shown the greatest interest in the proposition. We will not only be kept in touch with the newer things in commercial engineering, but these

people will be only too glad to actually assist the Ordnance Department in the solving of its engineering problems, and in any general plan for munition preparedness, which is one of the most difficult things before the department, in view of the fact that we must make these plans, without expending a very large sum of money for actual production.

The CHAIRMAN. I think the committee understands the proposition.

Col. KING. I have just looked over the book of estimates for the fiscal year 1921, and I find that the printed matter in the tentative bill is exactly as it is printed in the Book of Estimates.

Col. KING. Well, I saw it in something; I thought it was the Book of Estimates.

The CHAIRMAN. No, you will find the language in the Book of Estimates, page 387, and it is just as we have printed it in the tentative draft of the bill. This language that you are submitting is a substitute for that language.

Col. KING. Yes, sir. I thought it was different in here from what it is in the Book of Estimates.

The CHAIRMAN. I have just compared them and find that the language in the estimate in this print is just like it is in the book.

Col. KING. The amount appropriated under "Ordnance service" for the present fiscal year 1920 was \$7,000,000. The following was the status of this appropriation on January 15, 1920: Treasury balance, \$5,246,348.74; outstanding allotments, \$3,297,912.83; unallotted balance, \$1,948,435.91; outstanding reservations, \$1,529,725.24; unallotted and unreserved balance, \$418,710.67. The status on March 1, 1920, was as follows: Total allotments for the fiscal year, \$6,230,307.80; unallotted balance, \$769,592.20; Treasury balance on February 29, 1920, \$3,894,392.12.

The CHAIRMAN. It is safe to assume that you will not have any money left under this item at the end of the fiscal year?

Col. KING. No, sir; we have spent additional money, which I intend to bring out further on.

The CHAIRMAN. Very well.

Col. KING. The estimate submitted by the Chief of Ordnance to the War Department for the present fiscal year was \$7,120,856.48. This estimate had been considerably reduced before it was submitted. Per instructions of the War Department, and without the knowledge of this office, the estimate was cut to \$2,824,000, which is the amount shown in the document above referred to.

The value, before the war, of the arsenals, proving grounds, etc. (including buildings, machinery, and plant equipment), exclusive of ordnance material, was \$28,000,000. The present value of ordnance establishments, exclusive of ordnance material, is \$390,600,000. The value, before the war, of all ordnance establishments, including ordnance material, was \$98,388,471.72. The present value of same is \$2,300,000,000. This does not include salvage in other plants. \$300,000,000. For the fiscal year 1916—I am taking that as a basis—the appropriation for "Ordnance service" was \$325,000, which was 1.16 per cent of the value of the establishments, exclusive of material, and 0.33 per cent of the value, including material. The Ordnance Department estimate of \$7,121,000, approximately, for the fiscal year 1921 is 1.83 per cent of the value of existing ordnance

establishments, exclusive of ordnance material, and 0.31 per cent of the value, including material. The \$2,824,000 carried in the document above referred to is 0.73 per cent of the value of existing establishments, exclusive of ordnance material, and is only 0.123 per cent of the present value, including ordnance material.

The cost of guards and firemen alone at the beginning of the present fiscal year was at the rate of \$3,078,600 per year, which was 0.134 per cent of the value of existing ordnance establishments, including material. The number of guards and firemen required was 2,199. As it was apparent that we had not sufficient funds for this number the subject was investigated by a board and the number reduced to 1,580, the salaries of which were \$2,212,000 per year, or 0.096 per cent of the present value of ordnance establishments, including material. The salaries for 2,199 guards and firemen would be 0.789 per cent of the present value of ordnance establishments, exclusive of ordnance material. The salaries of 1,580 guards and firemen would be 0.567 per cent of the present value of ordnance establishments exclusive of ordnance material.

The amount absolutely required for guards is almost as great as the amount shown in the Book of Estimates.

The CHAIRMAN. The guards are civilian employees?

Col. KING. The guards and firemen; yes, sir.

The CHAIRMAN. I understand.

Col. KING. It is necessary to maintain fire-protection forces at many of the establishments, especially the general ordnance depots and ammunition depots, as they are remote from cities, and assistance can not therefore be obtained therefrom.

The CHAIRMAN. How much do you pay those guards per month—those civilian guards?

Col. KING. The total amount for 1,580 guards is \$2,712,000. The rates vary at different places. It depends upon the location of the establishment; \$1,300 is about the average.

The CHAIRMAN. Of course, that is considerably above what you have to pay the enlisted men.

Col. RICE. It is from \$1,200 to \$1,400.

Col. KING. Of course, there are some fire chiefs and men like that who receive more.

The CHAIRMAN. Could not enlisted men be detailed to guard the arsenals?

Col. KING. We have not a sufficient number of them for that purpose and to do the other duties they have to perform.

The CHAIRMAN. Well, they have a service corps at West Point. That corps is made up of men who have been in the Regular Army for a number of enlistments, and for faithful performance of their duties they are given a favored station. Could you not secure for the Ordnance Department that class of men who could get this kind of work to do, after they had been in the service, say, 10, 15, or 20 years, and would it not be a great saving to the Government if such enlisted men should be given that kind of service?

Col. KING. I have forgotten the figures, but I think the cost of maintenance of a soldier is greater than \$1,000 a year.

The CHAIRMAN. No; I do not recall that it was as much as that, although I do not know. You might put the exact figures into the hearing. They are easily obtainable.

Mr. FIELDS. Gen. Lord has that figure.

Gen. LORD. What figure is that?

The CHAIRMAN. The cost of maintenance of an individual soldier—an enlisted man.

Gen. LORD. Including clothing, subsistence, and pay?

The CHAIRMAN. Everything for the individual.

Col. SMITH. It has been estimated at about \$1,600. That amount means the total for the support of the Army divided by the number of enlisted men.

The CHAIRMAN. Of course, that includes men who are sergeants majors, and first-class sergeants, and takes in all the noncommissioned officers also?

Col. SMITH. Yes, sir.

The CHAIRMAN. I wanted to get the cost of maintenance of the ordinary enlisted man, and also the enlisted man, first class.

Col. SMITH. Excluding such items as cost for officers?

The CHAIRMAN. For the noncommissioned officers.

Col. SMITH. We can prepare such a statement and insert it in the record.

Col. KING. Many of the establishments do not have barracks for these men.

The CHAIRMAN. I see.

Col. KING. We would have to build barracks for them, which would be an additional expense.

The CHAIRMAN. That would be an additional item of expense?

Col. KING. Yes, sir; and it would also require additional officers, noncommissioned officers, to take care of them.

The CHAIRMAN. And you are now of the opinion that it is cheaper to employ civilians?

Col. KING. Absolutely.

The CHAIRMAN. Your experience has demonstrated that?

Col. KING. Yes, sir. The commanding officer of a manufacturing establishment, such as an arsenal, would rather have his men, when they finish their work go home. He would not then have anything to do with them. They look after themselves between that time and the time they get back to work in the morning, and they are no trouble and no expense to the Government. Considering the overhead, greater number required, etc., the soldier guard would be more more expensive than the civilian guard. If the restrictions as to extra duty, number of days off guard, requirements as to vocational training, etc., could be removed, and the men enlisted for guard duty only, they might be no more costly.

The CHAIRMAN. I see.

Mr. FIELDS. I can see where an officer might be relieved of an additional burden, but the question we are interested in is the difference in cost to the Government between using the enlisted men and employing civilians. That is why we would like to have the figures on that. What we are interested in is the actual cost to the Government of the civilian employees, as against the enlisted men.

Col. KING. We will give you those figures.

(The matter referred to follows:)

Tables giving the cost of maintenance, including pay, subsistence, clothing, supplies, etc., for enlisted men and noncommissioned officers.

	Rate per month.
Average base and service pay of an enlisted man in a company of infantry.....	\$34. 10
Subsistence for 30 days, at 58 cents per day.....	17. 40
Clothing and equipage.....	14. 62
Dental supplies and equipment.....	21
Medical supplies and equipment.....	2. 08
Engineer supplies and equipment.....	1. 03
Arms and ammunition, and individual equipment.....	12. 83
Quarters, heat, and light.....	4. 21
Total.....	86. 55

The following table gives the corresponding data for enlisted men and noncommissioned officers of the Ordnance Department, for all enlistments up to and including the seventh.

Grade.	Rate per month.						
	First enlistment period.	Second enlistment period.	Third enlistment period.	Fourth enlistment period.	Fifth enlistment period.	Sixth enlistment period.	Seventh enlistment period.
Private.....	\$82. 45	\$85. 45	\$88. 45	\$89. 45	\$90. 45	\$91. 45	\$92. 45
Private, first-class.....	85. 45	88. 45	91. 45	94. 45	97. 45	100. 45	103. 45
Corporal.....	88. 45	91. 45	94. 45	97. 45	100. 45	103. 45	106. 45
Sergeant.....	96. 45	100. 45	104. 45	108. 45	112. 45	116. 45	120. 45
Orderly sergeant.....	103. 45	107. 45	111. 45	115. 45	119. 45	123. 45	127. 45

Pay and allowances of officers are not included. The figures assume that facilities exist for housing these men, without entering upon a building program.

The CHAIRMAN. Col. Stuart says he may be able to throw some light upon that question of the enlisted men doing the work.

Col. STUART. We have had the question of the substitution of the enlisted men for civilians, especially at our storage depots, under consideration ever since the armistice. One of the conditions which confronts the Army right now is the necessity, in order to get recruits, of offering them educational and vocational training, which is a very important part of the program. In this campaign which is just closing we have been able to get 3,500 enlisted men. We hope to be able to bring up the strength from 3,500 to 4,500, which is the authorized strength.

The CHAIRMAN. You mean of the Ordnance Department?

Col. STUART. Of the Ordnance Department, and to hold them at 4,500, but at the present time it looks as though the number of enlistments would be just about equal to the number of men we are going to lose. It is questionable whether we can hold them up to 4,500 even.

So far as the use of enlisted men for guards is concerned, we have found from experience that you can not put a man on guard, especially these men, enlisted as they have been with the understanding that they are going to get vocational educational training—you can not put them on guard for more than an average of about 8 hours a week. A civilian guard does 48 hours a week. And when you consider all the noncommissioned officers, the company clerk, the first

sergeant, the mess sergeant, the cooks and kitchen police, who are all deducted from your effective strength, the ratio is about 1 to 7. In other words, one civilian guard, for the purpose of guarding is equivalent to about seven enlisted men.

The CHAIRMAN. That is very enlightening, and gives the information we wanted.

Mr. GREENE. That is the economics of it. Now, as to the military policy and the desirability of having everybody under an equal obligation for military purposes?

Col. STUART. The advantage of having enlisted men would be that if we had enough of them so that we could have a sufficient number of guards which would be required, without forcing them to do more than about one guard a week, the advantage of having those men at our storage depots and arsenals would be, of course, that they would inevitably receive training which would be very valuable in time of war. In other words, at our munition depots they are constantly handling munitions, and become thoroughly familiar with the precautions necessary, and the characteristics of the different types, and would be valuable in munition dumps in time of war. That is the other side, but, in the first place, we have not the authorized strength, as I say. We only have 3,500 now, and we are very doubtful whether we can get them up to 4,500, although we may.

Mr. GREENE. What is the effect upon the morale of the enlisted men by being thrown into association daily with a class of civilians who are, by that fact, military service men who enjoy privileges that the enlisted men do not have? Is there any observable sign?

Col. STUART. Very decidedly. You simply can not put a man who is getting \$1 a day alongside of a man who is getting \$3 or \$4 and expect him to be contented at all. The soldiers who are getting \$30 a month are perfectly willing to do the work, so long as they are not constantly comparing themselves with other men who are doing the same kind of work for \$3 or \$4 a day. If you put two groups of men, enlisted men and civilians, at the same class of work, it will not work.

Mr. GREENE. It comes down, then, to a balance between the economics on the one side, and on the other side the better morale and discipline, as well as the efficiency on the part of the men, who have no such standard to compare with, which causes a lowering of their morale or efficiency.

Col. STUART. Yes, sir; and, of course, we have got to consider the present situation.

Mr. GREENE. I understand. I am not debating that. That, of course, is very explicit and very convincing. I am speaking now in the larger terms of a military policy. The morale of the Military Establishment would be increased, would it not, by having everybody enlisted?

Col. STUART. Yes, sir.

The CHAIRMAN. All right; Col. King kindly proceed.

Col. KING. Before the war, all ordnance establishments but one, Picatinny Arsenal, were very compact. Therefore guard and fireman duty was comparatively simple and easy, not over 100 men being required. Many of the new ordnance establishments, general ordnance depot, ammunition storage plants, etc., extend over a great deal of ground, most of them containing thousands of acres,

the magazines being scattered about as required for safety, which render the guard and fire protection proposition exceedingly difficult and expensive. Before the war, the Ordnance Department had 14 arsenals, proving grounds, and depots. It now has 32 arsenals, proving grounds, and depots; a large number of plants that are being salvaged or otherwise disposed of; and 13 district ordnance offices engaged in accounting for and disposing of machinery, equipment, plants, matériel, etc.

The value of existing ordnance establishments, exclusive of ordnance matériel, is about 14 times as great as before the war. The value of existing ordnance establishments, including ordnance matériel, is 23.3 times as great as before the war. The amount required for the fiscal year 1921, \$7,121,000 approximately, is only 22 times as great as the amount appropriated for 1916. The amount appropriated for 1920 is 21½ times as great as that appropriated for 1916. The amount, \$2,824,000, carried in the document above referred to, is only 8.7 times as great as the amount appropriated for 1916.

For the operation of ammunition storage depots during the present fiscal year, \$4,270,000 has been used or obligated from "Armament of Fortifications C," which is applicable under the wording of that appropriation, but this operation has not been estimated for in "Armament of Fortifications C" for the fiscal year 1920, and will therefore have to be paid for from "Ordnance Service." The \$4,270,000, allotted under "Armament of Fortifications C," plus the \$6,230,407.80, referred to above, allotted under "Ordnance Service," makes a total of \$10,500,407.80 spent or allotted during the present fiscal year, which is only three-quarters completed, although, of course, some of the allotments made are for operations until the end of the fiscal year. It is evident, therefore, that the \$2,824,000 "Ordnance Service," or even the original estimate of \$7,120,856.48, will be entirely inadequate for the purposes for which intended.

It should be noted that additional items of expenditure are included in the phraseology of "Ordnance service," and are underscored. The estimated expenditure "for instruction purposes" is \$79,850.

Of the \$7,000,000 "Ordnance service" appropriated for the present fiscal year, \$3,570,207.17 has been spent or obligated by the Ordnance Department salvage board. Recently, on account of lack of funds, it was necessary to obtain an authorization of \$3,000,000 from Congress, from "Proceeds of sales," for its operation for the remainder of the present fiscal year.

The CHAIRMAN. In what bill was that contained?

Gen. LORD. The last deficiency bill, Mr. Chairman.

The CHAIRMAN. The last deficiency?

Gen. LORD. Yes, sir.

Col. KING. From January 1, 1919, to March 1, 1920, the board spent or obligated \$9,001,341.62. The estimate for the operation of the Ordnance Department salvage board for the fiscal year 1921 was \$2,173,557.20.

The CHAIRMAN. That is practically as much as you are asking for this entire item?

Col. KING. Not as much as we are asking, but nearly as much as is carried, in the Book of Estimates.

The CHAIRMAN. I mean as much as the War Department is asking?

Col. KING. Yes, sir; but that amount estimated for the Salvage Board was reduced, by the Ordnance Department to \$1,060,000, which is contained in our estimate of \$7,121,000 approximately. On account of the reduction to \$2,824,000, now carried in the Book of Estimates, it was necessary to reduce this item for the Salvage Board to \$400,000. The cost of operations of the Salvage Board to date has been 4.7 per cent approximately of the value of the material sold or otherwise disposed of. The estimate of \$2,173,557.20, above referred to, is less than 1 per cent of the value of the material yet to be disposed of. The estimate of the Salvage Board for the fiscal year 1921 is much smaller than it should have been, due to the fact that it was made several months ago, and it was thought that most of the material would have been disposed of before the end of the present fiscal year, which has not proven to be a fact.

The CHAIRMAN. How many civilian employees have you under pay under that Salvage Board?

Col. SHURTLEFF. About 3,500.

The CHAIRMAN. What is the average pay?

Col. SHURTLEFF. I suppose their average pay would be probably around \$1,800.

The CHAIRMAN. Do you propose to continue that force this coming year?

Col. SHURTLEFF. No, sir; we are reducing that force at the present time at the rate of about 5 per cent a month, and after the 1st of July we will be down to 50 per cent of our present force.

The CHAIRMAN. Do you expect to continue that force during the fiscal year 1921?

Col. SHURTLEFF. No, sir; we expect to be practically cleaned up by the end of December.

The CHAIRMAN. Do the officers of the Ordnance Department find the customers for the material that is salvaged?

Col. SHURTLEFF. Yes, sir; practically always. We have 13 of these district branch offices. Each one has a salvage organization. They are the actual selling force, and we do all the actual selling. Of course the Director of Sales becomes interested when we make a sale of the whole of a commodity, a large amount, like copper, and the Director of Sales makes the actual contract, but we have to maintain the organization to operate that contract. We have to do the loading, weighing, and make the deliveries, and we collect the funds, and we do all of the accounting.

The CHAIRMAN. So all the work that the Director of Sales has to do in connection with the matter is largely clerical?

Col. SHURTLEFF. Supervision. He has to approve the payments, and he has to approve the contracts that we make and lay down the general policy under which we can sell.

The CHAIRMAN. Have you been doing that, as you have indicated to the committee, during this whole fiscal year?

Col. SHURTLEFF. Yes, sir; since the 1st of January, 1919.

The CHAIRMAN. How much has it cost the Ordnance Department to prepare all the data in connection with the salvage and with the sale of the salvaged material?

Col. SHURTLEFF. I could not myself answer that. Our total expense from the 1st of January, 1919, up to the 1st of March of this year has been this amount that Col. King just read, \$9,001,321.62,

but those expenses involve more than sales; they involve transfers to the other Government departments. For instance, up to the 1st of March, since the beginning, we have disposed of \$197,139,216.97 with respect to all property. Of that \$122,398,000, or a little over are sales. The remainder of practically \$75,000,000, or slightly less than \$75,000,000, are transfers to other governmental departments.

The CHAIRMAN. Do you really think that the officers of the Ordnance Department, having found a customer, and having fixed the price, and having found the quantity of surplus material to be sold, could consummate the sale without the intervention of any civilian employee of the Government?

Col. SHURTLEFF. Yes, sir, they could; that is the organization. Of course, we would have to have some civilians. It could not be done entirely by officers. We have not enough officers to do it, but we could do it in our organization. Where we have to come in with the Director of Sales is when Ordnance or some other bureau has some large commodity and they would be grouped together and one sale made for all bureaus.

Mr. McKENZIE. You stated that the Director of Sales has supervision over this whole matter, but, as a matter of fact, you do the work and he supervises it, but he, of course, has authority to veto any transaction that you may have agreed upon with a customer, is that true?

Col. SHURTLEFF. Yes, sir.

Mr. McKENZIE. Can you tell the committee whether or not the Director of Sales at any time has put his veto on a sale that you have made, and then had a resale made of it, and thereby got in some more money for the Government than it would have gotten if the ordnance officers had gone on and carried the thing out?

Col. SHURTLEFF. I do not know of any such instance; no, sir.

Mr. McKENZIE. Well, my purpose in bringing that out is that I am trying to find the facts, if possible, so that the committee can justify itself in making an appropriation to continue this organization. I understand you are asking for \$400,000, is not that the amount?

Col. SHURTLEFF. No, sir; we are asking for \$4,000,000.

Mr. McKENZIE. For the sales organization?

Col. SHURTLEFF. No.

The CHAIRMAN. No; of the amount included, as I understand it, in this total of \$2,824,000 for ordnance \$400,000 is allotted to the sales or, rather, the Salvage Division.

Col. SHURTLEFF. \$400,000.

Mr. McKENZIE. That is the way I understood it. Now, I can understand and see where perhaps the Director of Sales, as one individual down here in the War Department, might coordinate, as you just stated, a sale of the same character of articles in the Quartermaster Corps and the Ordnance by bringing those together and having a bulk sale made of the whole amount, and there might be some justification for our making an appropriation to continue this man if there is no officer in the Army of the United States who is possessed of sufficient capacity and commercial acumen, you might say, to fill his place, but I would like to have some one give us some clear, good reason why we should continue this organization, so that if we decide to do it we will be able to defend it. I am frank to say that I am unable to see the reason for it.

Col. KING. May I suggest that we will submit a proviso a little later on which will probably give you more data on that.

Mr. MCKENZIE. All right.

The CHAIRMAN. Proceed.

Col. KING. The operations of the Ordnance Department, so far as the appropriation "Ordnance Service" is concerned, have practically no bearing upon whether the Army consists of 175,000, 200,000, or 225,000 men. The issues, of course, depend upon the size of the Army, but the difference is almost negligible so far as the Ordnance Department is concerned. It has enormous additional depots and enormous quantities of material which must be guarded, protected from fire, cared for, etc.

Attention is invited to the fact that the item \$3,600,000, page 388 of the Book of Estimates, Army bill, which is the bill that contains "Ordnance Service," "for the purpose of manufacturing and procuring field artillery material for the National Guard," has been or will be withdrawn, and this amount at least should be added to the \$2,824,000, "Ordnance Service."

Before the war, the appropriations for ordnance service were not sufficient for the purpose, and it was necessary for the manufacturing arsenals to absorb the deficit and charge it as "overhead expense" on manufacturing operations.

In summing up, the following are the reasons why the appropriation "Ordnance service 1921" should not be reduced below the \$2,824,000 now carried in the Book of Estimates, but should be increased to at least \$7,120,856.48, which was the amount submitted in the estimates of the Chief of Ordnance.

As indicated in paragraph 3, the amount called for in the Book of Estimates resulted from an arbitrary cut of the estimate of the Chief of Ordnance, without his knowledge, and therefore without consideration of the absolute requirements of the Ordnance Department.

Before the war, the Ordnance Department had only 14 arsenals, proving grounds, and depots, whereas now it has 32 arsenals, proving grounds, and depots, 13 district ordnance offices, and numerous plants obtained during the war which are being disposed of either in whole or in part.

The amount appropriated previous to the war, the fiscal year 1916, was 1.16 per cent of the value of the existing ordnance establishments exclusive of matériel and 0.33 per cent of the value, including matériel, which amount was not sufficient for the purpose, the deficit having to be covered as an overhead charge on manufacturing operations. The Ordnance Department estimate of \$7,121,000 approximately for 1921 is 1.83 per cent of the value of existing ordnance establishments exclusive of ordnance matériel and 0.31 per cent of the value, including matériel. The \$2,824,000 carried in the document above referred to is only 0.73 per cent of the value of existing establishments exclusive of ordnance matériel, and 0.123 per cent of the present value, including ordnance matériel. In only one case is the percentage greater for our estimate for 1921 than in 1916, namely, 1.83 per cent is greater than 1.16 per cent. This is readily accounted for by the relatively greater increase in value of ordnance matériel which must be taken care of, changes in conditions, etc., indicated below.

The value of existing ordnance establishments, including ordnance matériel, is 23.3 times as great as before the war. The value, exclu-

sive of ordnance matériel, is about 14 times as great. The amount requested by the Ordnance Department, \$7,121,000, approximately, is only 22 times as great as for 1916. The amount appropriated for 1920, which was entirely too small, as indicated below, was 21.5 times as great as for 1916. The amount of \$2,824,000, carried in the document above referred to, is only 8.7 times as great as for 1916.

The amount absolutely required for guards and firemen alone is 78 per cent of the amount carried in the Book of Estimates and 32 per cent of the amount, \$7,121,000 approximately, estimated by the Ordnance Department. One thousand five hundred and eighty guards and firemen are now required, whereas the maximum limit before the war was not over 100. The cost for guards and firemen is only 0.86 per cent of the present value of ordnance establishments, including material, which is only a very small percentage for the necessary protection. If this protection can not be furnished, the loss of property may be enormous.

The comparative values, before and since the war, of ordnance property and matériel is not a proper indication of the cost of caring for it, due to the fact that the new plants cover thousands of acres, the property is more scattered, and the care and maintenance is therefore more difficult and expensive.

Labor and material are much more expensive now than before the war or than during the war.

To protect ordnance matériel from rusting, etc., constant attention and work is necessary. Unless rusting, etc., is prevented, enormous amounts of property will become unserviceable and worthless.

Whether the Army is to have 175,000, 200,000, or 225,000 men has little to do with the size of the appropriation "Ordnance service." The Ordnance Department has the enormous quantities of property to be guarded, protected, and cared for, regardless of any other considerations.

Mr. McKENZIE. What progress did you make last year or during the current fiscal year in getting ordnance matériel that was shipped across taken care of?

Col. KING. Quite a great deal of progress was made, but there has been so much shifting of matériel that a great deal of the time of the men has been taken up in handling it. Taking the machinery and manufactured articles from some manufacturing establishment which did not belong to the United States, or the Ordnance Department, to the arsenals and depots has consumed a great deal of time of the men engaged on this work and is paid from "Ordnance service" or from the appropriation A. of F. that I referred to above.

Mr. McKENZIE. Have you got the matériel all back from France, or is that still coming in?

Col. KING. There is some still coming in. I understand there was a large shipment that came in from England a short time ago, some stuff that was purchased before the armistice.

Col. RICE. All of our material is back from France, except some that we were required to receive from England on contracts made before the armistice, which has not yet been delivered. It is not a very large quantity.

The CHAIRMAN. Is it all slushed, as you call it?

Col. RICE. Yes, sir; it must be slushed, and also have the rust taken off.

The CHAIRMAN. This work has to be done to a certain extent in this country?

Col. RICE. Yes, sir.

The CHAIRMAN. By slushing you mean oiling and washing off the mud on the matériel?

Col. RICE. After handling at the dock on both sides, and travel by boat, due to the salt air, it usually arrives with a certain amount of rust on it, and all of that rust is removed by greasing with cosmolin, or other slushing material, and sometimes some little repairs have to be made on it, because of a certain amount of breakage. Of course, this that I am talking about is all new material.

Mr. GREENE. Somebody will ask us on the floor very likely whether there is any part of this war-spoiled equipment, ordnance and so on, that would be useful in our service.

Col. RICE. The German material?

Mr. GREENE. Yes.

Col. RICE. We are not contemplating using any of it, except in an experimental comparison with other types. There is some that might be useful if it were suited to our needs, but not very much.

Mr. GREENE. It could be used in an emergency, possibly, as a last desperate emergency?

Col. RICE. I do not think we would gain anything even by that, because we would have to manufacture new types of ammunition, and the equipment I have in mind is not complete. It lacks sights and fire-control instruments, which are special for that particular equipment.

The CHAIRMAN. They were taken off, thrown away, and lost, were they not?

Col. RICE. Very largely although we have some guns with the breaches in them. There are quite a number of machine guns that were delivered to us after the armistice, and if we had the German ammunition, or the money to manufacture it, or preferred for any reason that type of machine gun to the one we had, they could be used.

The CHAIRMAN. What is the caliber of the German ammunition?

Col. RICE. It is approximately the same as ours, but it is an entirely different type of cartridge.

Mr. GREENE. That is why I suggested as I did, General, that it would be a last, desperate emergency.

Col. RICE. Yes, sir.

Mr. GREENE. There does still abide in it some capacity for usefulness, but not an economic one, and not one that you would care to avail yourself of except in some last desperate emergency.

Col. RICE. The possible use is limited, and it would be the last thing we would do.

Mr. GREENE. The popular impression in the country is, "If we have got a lot of this, why not use it?"

Col. RICE. There are some 500 or 600 gun carriages for the German light howitzer which we have in the warehouses, equipment which has never been used at all, and we sent those back very carefully and have them carefully put away, with the idea that we will probably hold them for some time, as we have no light howitzer; and if at any time in the near future we should want to use a light howitzer we might employ those carriages by making a gun for them and

making ammunition for them quicker than we could make our own new type. That is the only thing we are contemplating using at all. As far as the machine guns are concerned, we are perfectly willing to turn them over as ornaments.

Mr. McKENZIE. Are these among the machine guns that were turned over to the Americans at the time of the armistice, or are they captured machine guns?

Col. RICE. No, sir; these are what we call surrendered. They were provided for in the armistice terms. We never know whether they are captured or surrendered.

The CHAIRMAN. They were surrendered by the Germans to America?

Col. RICE. Yes, sir.

The CHAIRMAN. They were originally in the possession of the Germans and we got them?

Col. RICE. We took them away from them bodily and by force.

The CHAIRMAN. Are those machine guns heavy machine guns, with a tripod?

Col. RICE. Half and half, Mr. Chairman; that is, the surrendered ones.

The CHAIRMAN. Well, I mean the total number. The Secretary of War furnished me with a list of captured and surrendered matériel, among which are 10,000 machine guns for distribution to the States. In that list are they all heavy machine guns, or are they—

Col. RICE. They are of both types. There were about 2,500 surrendered, as I remember, in the end. They were about half heavy and half light. Of those captured, some were heavy and some light, but just the proportion I do not know. It was not far from half and half.

The CHAIRMAN. The light ones are not of very much use as ornaments in front of a county courthouse, or some building of that kind.

Col. RICE. I should think they would be very useful; yes, sir.

The CHAIRMAN. They would be?

Col. RICE. I can not see why not.

The CHAIRMAN. In what way? I recognize that those on the tripod could be put upon a little pedestal and made very attractive.

Col. RICE. The light machine gun has a front rest, you know.

The CHAIRMAN. It has a rest?

Col. RICE. Yes; it is not big, but it has a tripod like the heavy one, which is a substantial support for the muzzle, so if they were set up on tripods, or a pedestal, or anything else, they might make a very good show.

The CHAIRMAN. Thank you for that information. Now, Col. King, you may proceed.

Col. KING. The amount of the appropriation for 1920, \$7,000,000, is entirely inadequate. As indicated in paragraph 9, \$10,500,407.80 has been spent or allotted. It has been necessary to use other funds which are applicable, but have not been asked for, for the coming fiscal year. In addition to the sum already spent or allotted, it has been necessary to obtain an authorization of \$3,000,000 from "proceeds of sales," in paragraph 11.

It is believed that the above absolutely proves the necessity for an appropriation of at least \$7,121,000 approximately, instead of a reduction to \$2,824,000 now carried in the Book of Estimates.

It is most urgently recommended that action be taken accordingly.

The CHAIRMAN. Did the General Staff cut that appropriation to \$2,824,000?

Col. KING. The General Staff or the Secretary of War.

The CHAIRMAN. Well, he would do it on the recommendation of the General Staff, and probably would not take the initiative in cutting it. He would get some military advice on the subject.

Col. SHURTLEFF. Well, as I understood it, it came back to the office with instructions to reduce to a certain amount, and they had only a short time, say, two hours, and the Ordnance office was not consulted on the reduction.

The CHAIRMAN. I wanted simply to find out what officer we can get before the committee to tell us who did propose to reduce that estimate.

Gen. LORD. I think the method followed, Mr. Chairman, was that the total of the items which made up the entire estimate was submitted to the Secretary of War, and it was considered much too large, and he cut the estimate to keep within the amount apportioned.

The CHAIRMAN. I see. Will you kindly continue, Col. King?

Col. KING. If the above can not be appropriated, it is recommended that an appropriation of \$6,060,858.48 be made. This is the difference between \$7,120,856.48, the Ordnance Department estimate, and \$1,060,000, the Ordnance Department estimate for Salvage Board operations. This amount is less than the sum of the items, \$2,824,000 for "Ordnance service" in the Book of Estimates, and \$3,600,000, "For the purpose of manufacturing and procuring Field Artillery material for the National Guard, etc.," contained in the same bill, page 388 of the Book of Estimates, which is being withdrawn.

With your permission, I should like to submit the following supplemental estimate:

Not to exceed \$4,000,000 derived from the sale of surplus ordnance and ordnance stores shall be credited to the appropriation of the Ordnance Department for the fiscal year 1921, which is available for the payment of expenses incurred in maintaining salvage activities, including necessary protection, handling and storage charges, and other incidental expenses in connection with the preparation for sale of surplus war supplies.

If for any reason this authorization can not be granted, an appropriation of \$4,000,000 is requested.

Mr. McKENZIE. How much property do you have for sale remaining unsold?

Col. KING. I will give some figures which will answer that question. This appropriation is necessary for the following reason:

The Ordnance Department estimate of \$7,120,856.48 for "Ordnance Service," fiscal year 1921, was arbitrarily reduced, after it left the Chief of Ordnance, to \$2,824,000. The estimate of the Chief of Ordnance contained an item of \$1,060,000 for Salvage Board activities.

Experience, during the past year since the estimate was submitted, has indicated that \$4,000,000 will be necessary for the Salvage Board operations for the fiscal year 1921.

\$10,500,407.80 has already been spent or allotted this fiscal year, for ordnance services and the operations of the Salvage Board. On March 6, 1920, House bill 12046 authorized an expenditure of not to exceed \$3,000,000 from the sale of surplus ordnance and ordnance

stores, for the operation of the Salvage Board outside of the District of Columbia, making a total of \$13,500,000 approximately, for the present fiscal year. It is evident, therefore, that the \$7,121,000 approximately, estimated by the Chief of Ordnance, will not be sufficient for the operations of the Salvage Board and other activities ordinarily covered by "Ordnance Service." The book of estimates allows only \$2,824,000 under "Ordnance Service."

The following information is furnished, relative to the activities of the Salvage Board between January 1, 1919, and March 1, 1920:

Total value of transfers of Ordnance property, \$74,741,175.29; total sales of Ordnance property, \$122,398,041.68; total sales and transfers, \$197,139,216.97; total expenditures, \$9,351,341.62; cost of operations, 4.7 per cent approximately.

Mr. McKENZIE. Do you count in that 4.7 per cent the transfers from one department of the Government to another?

Col. KING. Yes, sir.

Mr. McKENZIE. And give the sales director credit for that?

Col. KING. I do not think he gets anything.

Col. SHURTLEFF. The Director of Sales does not get any credit for that, but that is a part of the work the salvage board handles, those transfers.

The CHAIRMAN. So there is much interdepartmental work.

Col. KING. In order to transfer the material we have to crate it.

Mr. McKENZIE. That is not a matter affecting the percentage rate, is it?

Col. SHURTLEFF. It is included in the cost.

Col. KING. On the item of sales, the amount received was approximately 60 per cent of the Government cost. The percentage cost of operations, considering cost of material to the Government, would be 3.2 per cent.

Approximately \$230,000,000 worth of material will remain to be disposed of in 1921. There is about \$310,000,000 worth now.

It is estimated that, due to the fact that the most desirable machinery, material, etc., has been disposed of, the receipts will be about 40 per cent of the cost to the Government, or \$90,000,000.

The estimated cost of the operations is 1.74 per cent of the cost of the material to the Government, or 4.5 per cent of the estimated proceeds, making \$4,000,000, the amount asked for. However, much of the material yet to be disposed of is not so desirable as that already disposed of, and will require more work and time, and the salvage board operations may be more expensive.

Mr. McKENZIE. During the war, I take it, you had a very large number of hand grenades manufactured; is that true, or do you know about how many million?

Col. SHURTLEFF. No; I do not.

Col. STUART. Something like 25,000,000.

Mr. McKENZIE. Do you know how many were used in France?

Col. SHURTLEFF. We can give you the number of grenades that were shipped to France.

Mr. McKENZIE. It is not a question of being shipped. I would like to know if there is any way of finding out just how much use was made of the hand grenade by our troops in war, and if that can be arrived at, I wish you would get it and put it in the record.

Now, have you declared those hand grenades surplus?

Col. SHURTLEFF. Yes, sir.

Mr. McKENZIE. What do you sell them for, junk?

Col. KING. They are being sold for scrap.

The CHAIRMAN. You used a great many of them for making savings banks?

Col. SHURTLEFF. That was stopped, Mr. Chairman.

The CHAIRMAN. Who stopped that?

Col. SHURTLEFF. The Secretary of War, on request from the Secretary of the Treasury and the Secretary of State.

The CHAIRMAN. Why did they object?

Col. SHURTLEFF. They thought it was dangerous to allow them to go out into the hands of the public in that form.

The CHAIRMAN. The Reds might get hold of some of them and use them with deadly effect against inoffensive citizens. I rather think the Secretaries' action was justifiable.

Mr. McKENZIE. If it can be done for the record, Mr. Chairman, I would like to know. You say there were 25,000,000 of them?

Col. STUART. That is just my recollection.

Mr. McKENZIE. I would like to know how many of them were used in France by our troops—not shipped, but used—because they were no more good in Paris than they would be in the United States, as far as that is concerned. I wanted to get at the real facts about it, how many of them were used by our boys in actual conflict as a weapon, and how many millions of them have been designated as surplus and sold for junk.

The CHAIRMAN. Will you put that in the hearing?

Statement regarding hand grenades.

There were made in the United States the following hand grenades:

Assembled, defensive, Mark I and II.....	19,826,109
Machined bodies for defensive grenade, Mark I and II.....	6,441,860
Mark III offensive grenade.....	7,000,053
Mark II gas grenade.....	1,571,784
Mark II phosphorus grenade.....	516,571
Of these various grenades, there were loaded—	
Defensive, Mark I and II.....	12,336,968
Offensive, Mark III.....	4,803,192
Gas, Mark II.....	363,776
Phosphorus, Mark II.....	440,153
This leaves, unloaded—	
Defensive, Mark I and II.....	7,489,141
Offensive, Mark III.....	2,196,861
Gas, Mark II.....	1,208,008
Phosphorus, Mark II.....	76,418

There was expended in the United States for the production of hand grenades, \$11,-208,478.14. This includes everything from expenses for experimental work up to the purchase of the finished product.

There were used by our troops in combat, as per report of the American Expeditionary Forces:

Defensive grenades of domestic manufacture.....	188,748
Defensive grenades of foreign manufacture.....	757,171
Offensive grenades of foreign manufacture.....	660,820
Phosphorus grenades, British No. 27, foreign manufacture.....	73,637
Gas grenades, British No. 28, foreign manufacture.....	20,866

Col. KING. Yes; we will do the best we can on it.

The CHAIRMAN. But let me ask you further about that. About the time that we began to get into active operations, we kept pressing the Germans constantly. We did not allow them to dig in. The hand grenade was a little weapon or missile used for throwing into the trenches, to cause the wounding or the killing of the enemy in the trenches. Now, when you failed to continue trench warfare, the little hand grenade became practically useless, is not that the situation?

Col. KING. Yes.

The CHAIRMAN. Of course, the history of the war, as it developed, has shown that Gen. Pershing sent cablegrams back here to the War Department suggesting that all training in trench warfare be discontinued and that our troops should be trained for open warfare; but, I suppose, after all, we had to be prepared for any kind of warfare that we might encounter. Our intentions undoubtedly were to prevent digging in if we could; but if we had not been able to do it, those hand grenades would have been very useful and we would have been blamed if we hadn't prepared something of that kind.

Mr. McKENZIE. There is a limit to the power and endurance of a private soldier to carry arms and ammunition, and it looked to me that all these various devices that we were getting out at one time—muzzle bombs and hand grenades, and so on—would necessitate each soldier having a mule to carry them.

The CHAIRMAN. Of course; but the French and the English and the Germans had been using those various things for about four years. It was the hope and the wish and the desire of every American that when our troops got into active warfare, we could prevent the use of these extraordinary missiles. But if we had not been able to do so we would have been blamed for not having made preparations to meet that situation.

Have you anything else, Colonel, that you wish to state?

Col. KING. There is one supplemental. [Reading:]

The following supplemental estimate is also submitted:

For expenses connected with the loading and unloading of cars incident to the shipment of ammunition and components from present points of storage to new construction authorized in the second deficiency bill approved March 6, 1920, \$689,520

The bill referred to appropriates \$5,000,000 for the construction of permanent storage facilities at Ogden, Utah, and Savanna Proving Grounds, Ill. The amount requested is made up as follows:

Ammunition, 180,150 short tons, at \$2 per ton.....	\$360,300
Sodium nitrate, 219,480 short tons, at \$1.50 per ton.....	329,220
Total.....	689,520

The cost per ton for handling is based on the average cost determined from actual experience during the past few months. No estimate for this handling has heretofore been submitted. It is necessary and desirable to move this material as rapidly as new storage at the places above referred to is available, in order to reduce the quantities now stored at Raritan Arsenal, Curtis Bay General Ordnance Depot, Charleston General Ordnance Depot, Pig Point General Ordnance Depot, Delaware General Ordnance Depot, and Penniman General Ordnance Depot, etc. The magazines at these places contain more explosive material than is allowed by American, English, or French storage and distance tables for ammunition and explosives.

The CHAIRMAN. The suggestion was made to me a day or two ago about the practicability of dismantling the Benicia arsenal. As I understand it, you no longer manufacture there?

Col. KING. I was stationed at Benicia arsenal for two years, and I think it would be most undesirable to give it up. It is the only place we have on the west coast for the storage of powder and ammunition for the seacoast fortifications and for ordnance material for the fortifications and troops on the coast—

The CHAIRMAN (interposing). Including the troops, as I understand it, in the Philippines—

Col. KING (interposing). Yes, sir; and the Hawaiian Islands.

The CHAIRMAN. And Alaska?

Col. KING. Yes, sir; and also, there are repair shops there, which are very necessary, for we have had to use them all the time, with quite a number of employees, machinists, and so on, in the modification and repair of the armament of the fortification.

The CHAIRMAN. I understand that that has all been discontinued.

Col. RICE. I think that is a mistake. There has been no change in the status so far as I know other than the putting in of some new storage buildings. We have no other place on the coast where we could do such work.

The CHAIRMAN. I am quite aware of that. But I was told that it would be the policy to take the guns used in the sea coast fortifications, when they had to be rerifled, and ship them across the continent to some of the arsenals in the East and then send them back to the Pacific coast.

Col. KING. That would have to be done for rifling or relining or heavy work; but, for the lighter work, it is not necessary to ship the guns.

The CHAIRMAN. Why could not that relining work be done on the Pacific coast, and would it not be best to do it there than to pay the enormous freight charges for sending those heavy guns to the eastern shore of the country and then sending them back.

Col. KING. It would cost some millions of dollars to modify an arsenal such as Benicia Arsenal so as to reline guns, and up to the present time I do not think any guns have had to be shipped from the Pacific coast to the Watervliet Arsenal to be relined.

The CHAIRMAN. The big seacoast guns are supposed to have a life of about 70 shots, and when I hear the target practice going on it seems to me that they shoot 70 in one hour.

Mr. GREENE. Did not the experience of the war upset many of those tables with regard to the life of the guns and so on?

Col. KING. Yes; it did. A great deal depends upon the powder and the copper band on the projectile and the velocity and many other things.

Mr. GREENE. Did not the experience of the war develop the probability that with certain changes, such as you have referred to, the band on the projectile and so on, it was possible to prolong the life of the gun as well as to give them more direct flight, and overcome some of the errors?

Col. KING. Yes, sir.

The CHAIRMAN. Now, is there anything else that you desire to submit?

Col. RICE. We figure that the life of a 14-inch gun is 240 rounds.

The CHAIRMAN. That is splendid. I know it was stated that the life of one of those enormous guns was 70 shots and of course, every man who was against the Army and against the Navy was finding an opportunity to tell of the enormous cost of things and how valueless they are in the long run.

Col. RICE. Well, the accuracy of the majority of these figures is a good deal more now than it was. The target practice that we have had, in no case will require the gun to be relined. They have not carried it far enough.

I would like to go a little further into this matter in regard to three of the arsenals which were built during the war, and which were temporary in character, and the reason I especially wish to bring it out is because they are in a more or less of a peculiar situation and the Chief of Ordnance wants the committee to know what that situation is. It is involved in this appropriation, because, with the exception of one of the arsenals, where there is a certain amount of salvage work, their maintenance will be entirely from the appropriation for Ordnance Service during the coming year. During the past year they have been largely maintained with our manufacturing appropriations. These three arsenals are Old Hickory, Nashville, Tenn.; Amatol, at Amatol, N. J.; and Tullytown Arsenal, Pa. They are all temporary in character. Old Hickory is a powder plant which had a capacity of about 1,000,000 pounds of powder a day. It is an enormous plant. Col. Pelot has a picture here which I think the committee would like to see. It is a city in itself. It cost nearly \$90,000,000. The Tullytown Arsenal cost about \$7,000,000.

Col. PELOT [showing committee a photograph of the plant at Old Hickory]. This picture only shows the nitric acid and sulphuric acid parts of the plant. It does not show the entire plant.

The CHAIRMAN. How much was expended by the Government in the construction and organization of that camp?

Col. RICE. About \$89,000,000.

The CHAIRMAN. \$89,000,000?

Col. RICE. Yes, sir.

The CHAIRMAN. And if you scrap it now, how much can you get for it?

Col. RICE. It is now almost an impossible guess, but I would say between \$15,000,000 and \$20,000,000 would be a great deal.

The CHAIRMAN. Do we own the land upon which this powder plant is located?

Col. RICE. Yes, sir; there are 6,000 acres; and it has a water-supply system that is of sufficient capacity to supply the city of Buffalo; and it also has an enormous power plant. It is really a plant that you can not appreciate unless you see it. It has a town sufficient to take care of 20,000 people.

The CHAIRMAN. What stream is there?

Col. RICE. The Cumberland River; that is where they get the water; the reason for the great water supply is that an exceedingly large amount of water is used in the manufacture of powder, as well as the—

Mr. McKENZIE (interposing). It is practically a duplicate of the powder plant at Nitro, W. Va.

Col. RICE. Yes, sir; only it is a little less than 50 per cent larger.

Mr. McKENZIE. That cost about \$70,000,000?

Col. RICE. That cost between \$60,000,000 and \$70,000,000; yes, sir.

Mr. McKENZIE. How much do you expect to get out of Nitro?

Col. RICE (to Col. Shurtleff). We expect to get about \$10,000,000 out of Nitro, do we not?

Col. SHURTLEFF. Yes, sir; \$8,500,000.

The CHAIRMAN. How much did you say this plant cost?

Col. RICE. The Old Hickory plant cost about \$89,000,000.

Mr. McKENZIE. How many million dollars will it cost the Government to take care of that plant at Old Hickory?

Col. RICE. That is what I am getting around to.

The CHAIRMAN. Will you kindly state it to the committee?

Col. RICE. In these three plants we are confronted by this situation: They are temporary in character; they will have a high cost for maintenance; they have cost the Government a great deal of money; and they are part of the facilities required to cover the gap in the case of an emergency between our stocks of powder on hand and the time necessary to get commercial production or to get a new plant or commercial plants in production. As far as Old Hickory is concerned, it is the only powder plant that we have, so that we would like to retain these plants throughout the years as an insurance. Then there is the question as to whether we are going to salvage them.

If we do decide to keep them there will have to be adequate appropriations made each year. In addition to that, at the end of 5 or 10 years the probabilities are that we will have to begin to replace and to bolster up the structure, and put in new sills on the buildings, put on new roofs, put in new supports; so that after 5 or 10 years the cost of maintenance will go up. There is included in this estimate a very modest sum for each one of these places as I consider it now. We can not give any real figures on them because they have been demobilizing, shipping away salvage, and doing all that sort of thing, and the accounts are not separable into mere maintenance and other activities.

It is certain that, to maintain Old Hickory, including the care of the powder which is stored there, which is 100,000,000 pounds—and that will have to go on until we get other storage at least, or else the powder will have to be thrown away—it will cost between \$500,000 and \$750,000 a year to maintain that plant in any sort of condition. At Tullytown and Amatol the figures are a good deal more reasonable, but the facts are as they are for Old Hickory, that it is a complete plant and will require a great deal of maintenance, and after a certain number of years will require the expenditure of an additional sum of money to keep them in condition if they are needed.

Mr. McKENZIE. How long will the stock of powder that we have on hand keep, General?

Col. RICE. We figure the average life of powder as 15 years, which means that some of the lots will begin to go bad soon and some not for 20 years or more. We have 275,000,000 pounds of powder on hand now.

Mr. McKENZIE. Well, in the deficiency bill, passed in the House a short time ago, we carried an item of \$6,000,000 for preparing storage to take care of that—in the Savannah Proving Grounds and one or two other places.

Col. RICE. I think that estimate did not include the bulk storage of powder?

Col. STUART (interposing). No, sir; it did not include it.

Mr. McKENZIE. That is one of the things which was a fixed improvement, and which I happen to know about because it was my in own county, and if it did blow up it would not do much damage. They have a strip of land between the bluff and the Mississippi River, which is the ideal spot; the best place in the United States, if we have got to store it, and there is a proving ground there now, and I understood a great deal of powder is to go out there?

Col. STUART. Yes, sir; ultimately the committee did not move any more than just enough to remove the danger from our eastern coast. In other words, to take away enough ammunition from overloaded magazines right near cities and also to let us empty magazines which are in hazardous locations, one of which happens to be right on top of a fireworks factory, which is not over 400 feet away. It is to relieve that condition that that appropriation is made up ultimately, and if the committee would agree that the rest of it should be authorized—

The CHAIRMAN. I notice that you contemplate storing large quantities of powder at Ogden, Utah?

Col. STUART. No, sir; that is ammunition reserve for the western coast. Our nearest ammunition stores right now are at Baltimore. Everything we have got is right on our east coast, and not only have we got to move it, because it is dangerous for one thing, and in moving it we want to get a supply near enough to the west coast, so that we will not have to wait two or three months to get it across.

We took that up with the Appropriations Committee. That site there is the site for the western coast. There are three railroad branches joining there.

The CHAIRMAN. That is why you selected that site?

Col. STUART. Yes, sir.

The CHAIRMAN (to Col. Rice). Now, General, what was the Chief of Ordnance, Gen. Williams, recommending about these plants?

Col. RICE. He recommends that at the present time there be an appropriation of enough money to take care of them during this coming year. We have up with the Secretary of War at the present time a question in regard to what shall be done and what shall be the program of the United States in regard to powder and in regard to these three plants, and as soon as we can come to a conclusion on that it will be presented to Congress.

The CHAIRMAN. The statement that you have made indicates that it is going to cost about \$1,000,000 a year to maintain these plants right from the beginning and that the amount will continue to increase rapidly after a period of 10 or 15 years. Now, would not the committee be justified, in view of that condition, to call it a case of the "first loss" being "best" and disposing of the whole thing?

Col. RICE. That is not possible this year, Mr. Chairman. For instance, we have this 100,000,000 pounds of powder at Old Hickory, which will cost us to take care of it \$400,000 or \$500,000; also, we can not get through salvaging Old Hickory probably not before the end of this year—

The CHAIRMAN (interposing). So that we are asked to throw \$1,000,000 more good money after bad: that is what it amounts to practically?

Col. RICE. No, sir; it does not look to me like that. At all three of these plants the land should be retained and the underground connections and the foundations should be retained. So far as this hearing is concerned we practically have no choice, because of the necessity for storage and the time required for salvaging. Before another year comes, perhaps before Congress adjourns this year, we will be able to present a concrete plan as to the future.

Mr. McKENZIE. Gen. Rice, why could not the problem be solved in this way, by making sufficient appropriations to furnish the guard and attendants necessary to protect the powder plant and guard this spot against fire, but not spend any money in any improvement of any kind?

Col. RICE. We are not planning any improvement.

Mr. McKENZIE. Well, do you want us to understand that it will cost several hundred thousand dollars to furnish a guard and watchmen necessary to protect the property down there?

Col. RICE. Well, there is more than that to it. Take Old Hickory: We have a plant worth \$89,000,000. If we are going to salvage it we must take care of it until we do salvage it. We have to have railroads that will operate; we must have the water plant so that it will work; we must keep workmen there to do the work and take care of the plant and powder until we salvage it. There are certain things which we can cut out and reduce the expense, of course, but it is not now in condition so that it can be reduced to a guard only.

The CHAIRMAN. It is going to cost \$750,000 to do the things which you feel are necessary for this coming fiscal year at Old Hickory?

Col. RICE. It will be something like that.

Mr. HULL. I mean, when did you acquire the land?

Col. RICE. During the war.

Mr. HULL. During the war, before the armistice?

Col. RICE. Yes, sir; during the war and before the armistice.

Mr. HULL. The armistice came and then all negotiations stopped, and settlements were made with the farmers and I understood that most of the land was immediately returned and the Government made no restriction of any kind there?

Col. RICE. Yes, sir; that condition though did not exist in this case.

Mr. HULL. What I had in mind—I may be mistaken, but if I am it should be cleared up—is that in some places they built plants; they bought the land and built the plant. They did this with money advanced by the Government, but they took the risk and they were making a profit and they made millions of dollars on the contracts they had with the Government. Then, after the armistice, the Government went in and bought the plant?

Col. RICE. That is not quite correct, Mr. Hull; Government facilities and increased facilities, when used by the Government, were paid for by the Government, and there were some forms of contract that did not transfer them until the end of the work; but I do not believe there were any cases where a plant was put up by private concerns out of Government money and then sold back to the Government at a profit unless the plant was for sale, surplus, and the Government did not need it and the man who had charge of it was the best purchaser that the sales people had.

Mr. HULL. No; you misunderstand me. The sale was to the Government after the armistice?

Col. RICE. Only in those cases where it was desired to retain the facilities and where it was to the Government's interests to do it.

Mr. HULL. I never understood where the authority came from for the purchase after the armistice of these plants. For instance, the Elmwood plant, which was a similar case, in the Air Craft—they did not purchase it, but they came to Congress and asked for authority?

The CHAIRMAN. After we passed the act of July 11, 1919, which forbid them acquiring any additional realty?

Col. RICE. You gentlemen are getting me a little bit beyond my depth without looking it up, but I know that the general principle was that the Government owned the plants—that is, the buildings and the facilities. In this case they acquired title to the land, and the primary reason was one of economy to the Government.

The CHAIRMAN. As I recall, the Secretary of War came to the committee, and stated that where the property could be purchased and more money could be obtained by salvage after the purchase for the Government than could have been accomplished by paying claims for damages and rentals the War Department wanted the advice of this committee whether it would not be best to buy the property. Now, I take it from your statement that a condition similar to that prevails with these plants that you have in mind, and the Secretary of War concluded that it was better, for the purpose of the Government, to buy the tracts of land, because in the long run he would obtain more for salvage than if he had paid the damages and the rental?

Col. RICE. In many cases it is desirable to acquire the land. Take the case of Old Hickory—the underground installation alone is worth something like \$18,000,000. You do not want that to be on land of some one else.

Mr. GREENE. General, I do not know whether this is the proper place or not to suggest it, but this and the Quartermaster Corps are the two great supply divisions of the service, and therefore in connection with your operations will come the bigger growth of figures for appropriations, outside of the usual maintenance of the Army, for pay, and so on.

Now, is there any practical way in which you can make the hearings show, when you get your copy for revision, what part of the appropriations you are asking for are not to be chargeable to the current maintenance of the Army, as it will start out as a living institution to maintain itself throughout the current fiscal year, but are really chargeable to the aftermath of war, to the cleaning-up part; and I ask that for this reason: That as the total is bulked together, the usual loose estimate of the public or people is that it is costing us to maintain this Army so much per capita, as if this total sum represented the total cost of maintenance for this year of this living institution; whereas, as we readily appreciate here, a large part of this money is really to take care of the problems of the war, and is not directly chargeable to maintenance of the Army from now on. In other words, without the aftermath of the war, your figures would be lessened just that much?

Col. RICE. Yes; I will put that in.

Mr. GREENE. You will make some general segregation and put that in?

Col. RICE. Yes, sir.

(The statement above referred to is as follows:)

The following table represents an approximate estimate as to the funds asked for under the Army bill appropriations for current Army needs and for clean-up of war activities.

Appropriation.	Total estimate.	Estimated current normal expenditures.	Estimated expenditures due to aftermath of war.
Ordnance service, 1921:			
Ordnance service estimate.....	\$7,120,000	\$5,340,000	\$1,780,000
Supplemental estimate for work of ordnance salvage board.....	4,000,000		4,000,000
Supplemental estimate for moving ammunition and components to permanent storage.....	689,000		689,000
Ordnance stores and supplies, 1921-22.....	1,753,255	509,055	1,244,200
Automatic machine rifles, 1921.....	1,000,000	835,028	164,972
Manufacture of ammunition, 1921-22.....	1,000,000	1,000,000	
Ordnance stores, ammunition, 1921-22.....	1,600,000	1,400,000	200,000
Small-arms target practice, 1921-22.....	960,000	960,000	
Tanks, 1921.....	1,208,000	1,208,000	
Total.....	19,330,255	11,252,083	8,078,172

NOTE.—The expenditures due to the aftermath of war relate to work of salvaging, cleaning, overhauling, repairing, etc., of war matériel, as well as to the upkeep of temporary storage facilities.

Mr. FIELDS. Col. Rice, how many pounds of surplus powder have you on hand now?

Col. RICE. We have a total of 275,000,000 pounds.

Mr. FIELDS. That is the total?

Col. RICE. That is the total.

Mr. FIELDS. How much of that would you regard as necessary for a reserve?

Col. RICE. On the present program we have figured that about 227,000,000 pounds are necessary for a reserve.

Mr. FIELDS. What would you do with the remainder—surplus—put it up on the market of the country?

Col. RICE. I do not think there is any market for it. I suspect that such of it as is not retained for reworking purposes will probably have to be destroyed. Of course, we would endeavor to sell it if we could. The chemists of England, France, and Germany have been working for some time on the possibility of using it to make celluloid or fertilizer.

Mr. FIELDS. Well, before the war, before we came into the war, the Du Pont people had begun experiments in the blasting of the soil and it proved to be very profitable. I wondered if, instead of dumping this, all this material could not be utilized in that way?

Col. RICE. If we can find any way in which to make a little money we will do it.

Mr. FIELDS. It would be better to sell it at a very low figure?

Col. RICE. Yes, sir; it costs money to destroy it. It is not an easy thing to do, but it is a long detailed work.

Mr. FIELDS. I recall that at the Huntington branch of the Du Pont branch, which is close to where I live, I had received a great deal of literature on the blasting of the soil, and they would go out to the agricultural colleges and make arrangements to get students during the vacations. They would furnish the explosives, instruct these boys, and arrange for these boys to do the work at so much an acre

and they would divide the profits with the boys; and it was one of the most profitable investments that a farmer can make, and I know that, because I have experimented on my own land and I have been very much interested on this question as to whether this explosive can be used; and I suppose it is a powder which can be set off with a fuse like any other ordinary powder.

Col. RICE. It usually has to be confined in order to be used as an explosive.

Mr. FIELDS. Is it a powder that you could wrap, for instance, in a paper cartridge. Take paper and make a cartridge of, say, 1 inch in diameter and as long as you want to make it, and then put it 4 or 5 feet in the earth. It could be handled in that way, could it not?

Col. RICE. You could fire it that way, but I do not believe you would get very much of an explosion.

The CHAIRMAN. I take it the problem that Mr. Fields is talking about is to improve orchards where they plant trees and in reforestation of lands so as to enable the trees to send out their roots easily?

Mr. FIELDS. Of course, it is used in horticulture but they even shoot up the whole farm by the acre, and it is on the principle of subsoiling, only it is much deeper and better. It allows the roots to go to a greater depth and it creates a subirrigation and you have always got a subirrigation. In fact, I have one piece of land that I had blasted six or eight years ago and it is worth five times what it was from a production standpoint.

Col. RICE. I do not believe it would work, Mr. Fields; it would burn instead of explode.

Mr. FIELDS. How does it compare with ordinary blasting powder?

Col. RICE. It is not at all like that.

Mr. FIELDS. I know the difference between powder and dynamite. All dynamite I am told exerts practically two-thirds of its force downward, while practically the whole force of the powder is upward; and it seems to me that the powder would be better for pulverizing?

Col. RICE. Unless powder is strongly contained it does not explode but burns, whereas the dynamite does explode.

Mr. FIELDS. If the soil to be blasted is five feet deep we punch a hole in the soil and then drop a cartridge in and then pour in the earth and tamp it tight and then it is confined tight because the earth makes it perfectly tight, and if this material could be used in that way, it looks like it would be a great waste not to so use it. The attention of the agricultural interests of the country should be invited to it.

Col. RICE. We are not dumping it if we can in any way get any money back. Of course, we have turned a large amount over to the Agricultural Department for experimental work.

The CHAIRMAN. General, we have only made headway in one paragraph of this bill this afternoon. Could we not take up the rest of the bill before we adjourn this hearing?

May we now take up "ordnance stores, ammunition," on page 53?

How much of the amount is expended or obligated up to the present time; do you know? Gen. Lord can probably give that.

Col. RICE. I have a general statement here. We will put it in the record.

The CHAIRMAN. We shall be glad to have it.

(The statement above referred to is as follows:)

Allotments for Ordnance Stores Ammunition, 1920-21.

OMS	5294.	Contingencies at Frankford Arsenal.....	\$15,000. 00
OMS	16228.	Contingencies at Frankford Arsenal.....	8,000. 00
OMS	5295.	Services and material issuing ammunition at Frankford Arsenal.....	10,000. 00
OMS	5360.	Sectionalizing small-arms ammunition and drop bombs..	3,056. 00
OMS	6734.	30-caliber blank cartridges.....	10,000. 00
OMS	6741.		
OMS	6747.	Shot-gun shells, 12 gauge experimental.....	76. 03
OMS	6748.		
OMS	8456.	50-caliber ammunition, experimental and development work.....	15,000. 00
O. A.	16117.	Opisometers.....	50. 00
O. A.	1684.	Manufacturing 30-caliber ammunition, Frankford Arsenal.....	900,000. 00
Total by Small-Arms Division.....			961,182. 03
By Administration Division for domestic shipments and transportation of ordnance personnel.....			70,000. 00
Grand total.....			1,031,182. 03
Appropriation.....			1,600,000. 00
Unallotted balance.....			568,817. 97

Ordnance stores, ammunition, 1921-1922.

Ordnance stores, ammunition, 1921-1922..... \$1,600,000

It is proposed to change the verbiage of the appropriation, "Ordnance stores, ammunition," as set forth below. The old wording is as follows:

"Ordnance stores, ammunition: Manufacture and purchase of ammunition for small arms and for hand use for reserve supply, ammunition for burials at the National Soldiers' Home in Washington, D. C., ammunition for firing morning and evening gun at military posts prescribed by General Orders No. 70, Headquarters of the Army, dated July 23, 1867, and at National Home for Disabled Volunteer Soldiers and its several branches, including National Soldiers' Home at Washington, D. C., and soldiers' and sailors' State homes." (Act July 11, 1919, vol. 41, p. 125, sec. 1.)

It is proposed to change this wording so that as changed it will read as follows:

"Ordnance stores, ammunition: For the development, manufacture, purchase, and maintenance of airplane bombs; of ammunition for small arms and for hand use for reserve supply; of ammunition for burials at the National Soldiers' Home in Washington, D. C., and of ammunition for firing the morning and evening gun at military posts prescribed by General Orders No. 70, Headquarters of the Army, dated July 23, 1867, and at National Home for Disabled Volunteer Soldiers and its several branches, including National Soldiers' Home at Washington, D. C., and soldiers' and sailors' State homes."

The reason for making this change in the wording of the appropriation, "Ordnance stores, ammunition," is so that the appropriation may clearly cover the manufacture and development of airplane bombs, which up to this time have not been clearly covered by any ordnance appropriation.

During the war-time emergency, the manufacture of bombs was carried out under this appropriation with no change in wording, inasmuch as when the Army first planned to manufacture bombs they were classed along with trench-warfare material and were supposed to be for hand use in that at the time when development started bombs were more of the grenade type and were supposed to be tossed by hand from aircraft flying over the enemy's territory.

The CHAIRMAN. How much of the "Ordnance stores ammunition" have you on hand?

Col. RICE. About 1,700,000,000 rounds.

The CHAIRMAN. That is a great deal more than you will have an opportunity to use in some years?

Col. RICE. Yes, sir.

The CHAIRMAN. Well, now, could this item be materially cut in the appropriation bill this year by reason of the fact that you will have such an enormous quantity on hand; can we not reduce the amount so as to just pay the ordinary expenses that are involved in this paragraph?

Col. RICE. There are two reasons for not doing that, Mr. Chairman. One is that the ammunition at present on hand presumably is good for only about 10 years, and if we are going to maintain our present reserve it will, therefore, be necessary to provide for a complete turnover in 10 years. A considerable quantity of the present reserve will be used from year to year in target practice and most of the present stock will probably be consumed in this way before it actually spoils. The amount of ammunition which it will be possible to manufacture with the money which is being estimated for this year will not replace the ammunition consumed in target practice as fast as it is expended. We have not considered asking for sufficient money this year to enable us to do this because we desire to have the question of the size of reserve which should be kept constantly on hand definitely determined first. For this reason it is very likely that requests for funds for the manufacture of small-arms ammunition in years to come will be greater than the estimate now under consideration. The second reason is that we should keep some knowledge of the manufacture of ammunition alive in this country, and it is believed that the amount of ammunition which we contemplate manufacturing during the coming year is the minimum amount which will enable us to hold together a skeleton organization capable of carrying on such manufacture, and in time of emergency capable of expanding rapidly to a war-time organization. Col. O'Leary will now give you the details of the estimate under this appropriation.

Col. O'LEARY. For manufacturing purposes under this appropriation the estimate includes a total of \$713,700. Of this sum \$480,000 is for the manufacture of small-arms ammunition; \$94,000 for the loading of 94,000 dummy drop bombs required during the next fiscal year for training purposes; and \$139,700 for the manufacture of Bouchon assemblies for hand grenades. In addition to the amount which we are asking for manufacturing purposes, we are requesting \$200,000 for the segregation and salvage of small-arms ammunition received from France and from camps in this country. This ammunition was received in such large quantities and in such bad condition that it is impossible to make use of it without expending during the next fiscal year the amount of money requested. We are also asking for a total of \$686,300 for experimental and development work on small-arms ammunition, drop bombs, grenades, and pyrotechnics. For the development and design of small-arms ammunition we are asking \$200,000, which is divided as follows: For the development of large caliber machine-gun ammunition, \$60,000—

The CHAIRMAN (interposing). You heard, did you not, what Mr. McKenzie said about grenades? Do you contemplate expending very much money for development work on grenades?

Col. O'LEARY. No, sir; we contemplate spending only about \$25,000 on that.

The CHAIRMAN. Is that all there is on that item?

Col. RICE. Yes, sir. I have a detailed statement here which I would be glad to have printed in the record.

The CHAIRMAN. We shall be glad to have it printed at this point in the record.

(The statement above referred to is as follows:)

The total amount of this estimate (ordnance stores, ammunition, 1921-22) is \$1,600,000, apportioned as follows:

Manufacture of small-arms ammunition..... \$480,000

It is estimated that the cost of caliber 0.30, model of 1906, ball ammunition, is \$40 per thousand. This sum will, therefore, be sufficient for the manufacture of 12,000,000 rounds of this ammunition. It is contemplated that some of the special types of small-arms ammunition, such as tracer and armor-piercing, will be manufactured during the year, and inasmuch as the cost of this ammunition is considerably greater than the cost of caliber 0.30 ball ammunition, the amount which can be manufactured will be correspondingly decreased.

In addition to this sum (\$480,000), the estimate under the appropriation "Small-arms target practice," contemplates the expenditure of \$470,000 for the manufacture of small-arms ammunition.

The manufacture of this ammunition is necessary in order that the supply on hand, which naturally will deteriorate with age and constantly grow smaller due to consumption in target practice, will be replenished from year to year with small amounts of fresh ammunition, and so that the Government will always be in a position to undertake the emergency production of this type of munitions of war promptly.

Segregation and salvage of small-arms ammunition..... \$200,000

Large quantities of small-arms ammunition were returned from overseas after the signing of the armistice and from training camps in this country. This ammunition was received in such large quantities that it was impossible to properly sort and care for same. It is estimated that during the fiscal year, 1921, it will be necessary to sort 500,000,000 rounds of this ammunition and to segregate same by lots and dates of manufacture. This ammunition will be contained in approximately 400,000 packing boxes, and it is estimated that 50 cents per box will be required.

Development of small-arms ammunition..... \$200,000

In order that the United States may keep abreast of the development by other countries of small-arms ammunition, it is estimated that at least this sum will be required during the fiscal year 1921. It is now thought that this sum should be expended approximately as follows:

Development of large caliber machine-gun ammunition, \$60,000. It has been found necessary to develop a machine gun larger in caliber than any at present in our service. The development work and development of ammunition therefor has already been initiated, and it is anticipated that it will be possible to complete the development of the ammunition during the coming fiscal year provided sufficient funds are available for the purpose. This sum (\$60,000) will be sufficient to provide for the procurement of sample lots of ammunition which will be necessary in order to develop the ammunition itself and facilities for the manufacture thereof. Such of this ammunition as is produced with portions of this sum should not be considered quantity production in any sense of the word.

Further development of rifle and machine gun ball ammunition, \$40,000. In so far as small-arms ammunition is concerned one of the most important developments of the war was the urgent demand for .30 caliber ammunition having an effective range of approximately 1,000 yards greater than the range of our present ammunition. This development work was undertaken before the signing of the armistice and has been carried on with considerable success since that time. In order to satisfactorily complete this project, it is believed that at least this sum of money (\$40,000) will be required.

Improvement of pistol ammunition, \$5,000. This sum, if appropriated, will be utilized in the improvement of the ballistic qualities of this ammunition.

Continuation of development of special small-arms ammunition, \$50,000. This sum is required to perfect the development of such types of small-arms ammunition as tracer, incendiary and armour piercing ammunition, and combinations of these types. This is not a new project, but the continuation of an old one. It is necessary that this development work be continued in order that we may feel assured that our special ammunition is at least the equal of any in use by other countries.

For surveillance tests, \$15,000. In order that a careful supervision of large quantities of small-arms ammunition at present on hand in storage may be assured with the end in view of detecting such ammunition as deteriorates to such an extent as to be unserviceable, it is believed that \$15,000 will be required for the fiscal year 1921.

A sample of each lot of ammunition manufactured is to be shipped to Frankford Arsenal and each year each sample will be subjected to certain tests in order to determine the state of the lot as regards preservation.

Maintenance of ballistic station, \$30,000. In the development of small-arms ammunition of all kinds a considerable amount of firing must be done in order that the performance of the ammunition can be determined. It also is necessary to determine the exterior ballistic qualities of new types of ammunition in order that correct firing data may be available for the use of troops. In order to conduct such firings it is necessary to maintain in a favorable locality a station especially equipped therefor. This requires the expenditure of a considerable sum of money and this special item (\$30,000) will be required for this purpose.

Loading of 4,000 dummy drop bombs..... \$94,000

In order to provide properly loaded dummy drop bombs for use in training during the next fiscal year, it will be necessary to load 94,000 at an estimated cost of \$94,000. These are the only bombs which it is contemplated will be loaded during the coming year, and are essential in order that the approved training program may be carried out.

Development of drop bombs..... \$417,000

A great deal of progress has been made in the recent development of drop bombs, but a great deal of work along this line yet remains to be done in order that this country may keep abreast of foreign development. For the next fiscal year \$417,000, subdivided as follows, will be required:

Demolition drop bombs, heavy case, 550 pounds in weight and under, \$75,000. If this sum is appropriated, it is believed that it will cover the completion of a program which has already been started by which it is expected to successfully develop heavy-case bombs weighing 100, 250, and 550 pounds. By this development program it is expected to ascertain the best metal to use in the bomb cases of each of these three sizes, and to manufacture enough bombs for test purposes in order to prove the design in each case.

Demolition drop bombs weighing 1,000, 2,000, and 3,000 pounds, \$100,000. A board of officers consisting of representatives of the Ordnance Department and the Air Service which recently met and considered steps which should be taken in the development of bombs has recommended the development of these three large sizes of demolition bombs. The 1,000-pound bomb has already been partially developed and experiments are now being conducted with a few experimental bombs of this size to ascertain whether or not the initial steps taken in the development are correct. This country is somewhat behind England and France in the development of bombs of these large sizes and this sum of money should at least enable us to overtake them during the next fiscal year.

Fragmentation drop bombs, \$9,000. This is the type of drop bomb which was in most general use during the war. This sum is desired in order to complete a development program now under way which will show the best metal out of which to construct these bombs, and also provide valuable data concerning the efficiency of fragmentation of these bombs in comparison with other existing types.

Incendiary drop bombs, \$25,000. This sum is required to continue an old development project which has not yet produced satisfactory results. So far as is known in this office no nation has as yet been successful in the development of a satisfactory bomb of this type.

Armor-piercing bomb, \$75,000. The bomb board referred to above has recommended the development of armor-piercing bombs weighing approximately 1,000, 2,000, and 3,000 pounds. These bombs are desired for use in attacking the decks of war ships and other armored targets, and the present contention is to modify the existing types of armor piercing projectiles so that they may be utilized as drop bombs. The initial work on the development of the 1,000 pound armor-piercing bomb has been started but no material progress has as yet been made.

Fuses for demolition drop bombs, \$6,000. This sum is needed to complete the development of nose and tail fuses for demolition bombs, this development work being necessary in order that satisfactory fuses from functioning and safety considerations may be available.

Fuses for fragmentation bombs, \$5,000. The preliminary development work on fuses for fragmentation bombs has been completed and it is now necessary to make a sufficient number of these fuses for practical service tests.

Fuses for armor-piercing bombs, \$10,000. It is desired to carry on the development of fuses in connection with the development of armor-piercing bombs referred to above. Ordinary fuses are not of sufficient strength to withstand the severe impact to which armor-piercing bombs will be subjected, and special types must therefore be developed. This sum of money will initiate the project, but it is hardly likely will wholly complete it.

Fuses for incendiary bombs, \$5,000. It is believed that some of the defects in existing types of incendiary bombs may be due to inefficient fuses, and the bomb board has accordingly recommended that the present Mark II incendiary bomb be modified by the addition of proper nose and tail fuses. The development of fuses for incendiary bombs will be carried forward with the development of incendiary bombs referred to above.

Special fuses for demolition bombs, \$50,000. This sum will provide for the development work required in the development of special fuses for demolition bombs. These special fuses are as follows: Nose-firing mechanism which will give a selected delay action—a fuse which gives a delay action varying from 2 hours up to and including 36 hours, and a fuse which will function without regard to the impact.

Fuses for flying torpedo bombs, \$7,000. This is a new project and one which has received the approval of the bomb board. It will initiate the development of such fuses as are needed for flying torpedoes, which are now being developed. No fuses of this kind have ever been made and it is not thought that existing types will be applicable.

Ballistic experiments, \$50,000. Up to the present time the Ordnance Department has been able to make notable progress in the study of ballistic characteristics of drop bombs. It is believed that our methods are somewhat in advance of those employed by other nations, and in order that we may carry on this most necessary and very valuable work during the fiscal year 1921, it will be necessary to expend \$50,000. By this ballistic work it is hoped to increase the accuracy and reliability of bombing. The results of these experiments will also indicate whether or not the form of a new bomb is the correct one.

For the manufacture of Bouchon assemblies for hand grenades..... \$139,700

The Bouchon assemblies at present on hand have proved to be unstable under storage conditions and recent tests have shown that over 30 per cent are defective. In order that a sufficient number of satisfactory Bouchon assemblies may be on hand for the training program for the coming fiscal year, assuming an Army having a strength of approximately 300,000 men, it will be necessary to manufacture approximately 234,000, and \$139,700 will be sufficient for the purpose.

An item of \$5,000 is being requested below to perfect a design for a satisfactory assembly.

Development of grenades..... \$25,000

A small amount of development work on grenades appears to be very desirable for the coming fiscal year in order that defects in existing types may be overcome and certain new designs developed. If this sum is granted it is proposed to expend it as follows:

For the development of Bouchon assemblies for hand grenades, \$5,000. The design of the present Bouchon assembly is unsatisfactory and contains several serious defects which necessitate a complete redesign. A design which promises to overcome the defects of the old type is now under consideration and development, and this sum will be required to finish the work and to manufacture a sufficient number for test purposes. This new assembly is the one for the manufacture of which \$139,700 is being requested above.

Impact detonator assembly for hand or rifle grenade, \$10,000. A demand has developed for a combination impact assembly for a grenade so that the grenade so equipped can be fired from a grenade gun and also be thrown by hand. Up to the present time no nation has been able to successfully develop such a firing mechanism for grenades. Recent developments by the Ordnance Department are promising, and this sum is desired in order that present experimental designs may be successfully completed and a sufficient number manufactured for test purposes.

Grenades for grenade thrower, \$10,000. At present there are two grenades in service, one for hand use and one for firing from rifle discharger. In addition to these types a demand exists for a grenade that can be fired from a grenade gun or be thrown by hand. Such a grenade body has been developed, and in order that a sufficient number for test purpose may be made, and in order to provide for the extensive tests which will be necessary with the Bouchon assembly, the impact detonator and the new bodies, it is believed that this sum will have to be utilized during the coming fiscal year.

Development of pyrotechnics..... \$44,300

During the war about 128 different types of signals were in use. Recently a pyrotechnic board has been convened for the purpose of considering pyrotechnics, and has recommended that the number of signals be reduced to 24. The board further recommended that the designs of some of the types to be retained be perfected. In order

that this development program may be carried out, this sum will be necessary and is subdivided as follows:

Signal cartridge and bandoleer for same, \$10,000.

Grenade type signal, together with device for holding grenade in aircraft gun, \$10,000.

New type airplane flare, \$10,000.

Development of present type wing tip flare, \$4,300.

Smoke bomb for C. A. C., \$10,000.

With the exception of the wing tip flare the development of new types is necessary and the amounts requested will be sufficient to fabricate experimentally enough samples for the tests which will be required to prove accepted designs.

Summary of estimate under appropriation "Ordnance stores, ammunition, 1921-22."

Small-arms ammunition:

Manufacture of small-arms ammunition.....	\$480,000
Segregation and salvage of small-arms ammunition.....	200,000
Development of small-arms ammunition:	
Large-caliber machine-gun ammunition.....	\$60,000
Rifle and machine-gun ball ammunition.....	40,000
Pistol ammunition.....	5,000
Special small-arms ammunition.....	50,000
Surveillance tests.....	15,000
Ballistic station.....	30,000

200,000

Drop bombs:

Loading of 94,000 dummy drop bombs.....	94,000
Development of drop bombs, etc.—	
Demolition drop bombs, heavy case, 550 pounds in weight and under.....	75,000
Demolition drop bombs, 1,000, 2,000, and 3,000 pounds..	100,000
Fragmentation drop bombs.....	9,000
Incendiary drop bombs.....	25,000
Armor-piercing bombs.....	75,000
Fuses for demolition drop bombs.....	6,000
Fuses for fragmentation bombs.....	5,000
Fuses for armor-piercing bombs.....	10,000
Fuses for incendiary bombs.....	5,000
Special fuses for demolition bombs.....	50,000
Fuses for flying-torpedo bombs.....	7,000
Ballistic experiments.....	50,000

417,000

Grenades and pyrotechnics:

Manufacture of Bouchon assemblies for hand grenades.....	139,700
Development of grenades—	
Time-fuse grenades.....	5,000
Impact hand grenades.....	10,000
Grenades for hand-grenade thrower.....	10,000

25,000

Pyrotechnics—

Signal cartridge and bandoleer for same.....	10,000
Grenade type signal, together with device for holding grenades in airplane.....	10,000
New-type airplane flare.....	10,000
Development of present-type wing-tip flare.....	4,300
Smoke bombs for C. A. C.....	10,000

44,300

Total..... 1,600,000

The above total of \$1,600,000 may be subdivided as follows:

For manufacturing purposes.....	713,700
For maintenance.....	200,000
For experimental and development work.....	686,300

Total..... 1,600,000

The CHAIRMAN. Please take up "Small-arms target practice." I see you are asking for a very material increase in that item. You have at the beginning of that paragraph, "For manufacture and purchase of ammunition, targets, and other accessories for small arms, hand and machine gun target practice and instructions." Have you not enormous quantities of ammunition and powder, and so on?

Col. RICE. So far as the manufacture of small arms ammunition under this appropriation is concerned, the general remarks which I made in connection with the manufacture of small arms ammunition under the appropriation "Ordnance stores ammunition" apply with equal weight to this item. The amount of money requested for this purpose is far below the amount which would be necessary to replace the ammunition which it is contemplated will be used in target practice during the coming fiscal year. Col. O'Leary will give you the various items which go to make up the estimate under this appropriation.

Col. O'LEARY. For the manufacture of service small arms ammunition the estimate contemplates an expenditure of \$470,000. For the manufacture of targets and target material we estimate that only about \$55,000 will be required during the year. We have not a large excess of targets and target material on hand, and there will have to be an expenditure of some funds for this purpose.

The CHAIRMAN. Fifty-five thousand dollars?

Col. RICE. Yes, sir. I have here the details of the estimate, "Small-arms target practice, 1921-22," which I would like so insert in the record at this point.

The CHAIRMAN. We shall be glad to have you insert it at this point. (The statement above referred to is as follows:)

Total amount of estimate under appropriation "Small-arms target practice" \$960,000.
This sum is apportioned as follows:

Manufacture of service small-arms ammunition..... \$470,000

This sum, together with \$480,000 requested for the same purpose under the appropriation "Ordnance stores ammunition," will enable the Ordnance Department to manufacture approximately 24,000,000 rounds of ammunition, the \$470,000 under this appropriation alone being sufficient for approximately 12,000,000 rounds. It is now estimated that from 150,000,000 to 190,000,000 rounds of ammunition will be used for target practice during the coming fiscal year, and it is, therefore, seen that this sum is not even approximately sufficient to replace this expended ammunition. However, on account of the large stock of ammunition at present on hand, this is not considered absolutely essential, but the manufacture of a small amount of ammunition during the year is considered of supreme importance.

Manufacture of targets and target materials..... \$55,000

The stock records of targets and target materials on hand indicate that of the vast quantity purchased during the war there is at the present time but very little remaining available for issue. Also it is understood that it will shortly be necessary to redesign many of our targets, owing to the contemplated adoption of improved methods in target practice. This latter will necessitate the procurement of a considerable quantity of material. It is estimated that the minimum amount of money required for this purpose is \$55,000.

Manufacture and purchase of ammunition and loading equipment for gallery practice..... \$420,000

Recently, a new and improved method of gallery practice has been adopted for the Army. This method consists of using the regular service rifle with a reduced charge of powder and lead bullets for this purpose, and contemplates that each organization will reload its own ammunition. Seventy-five reloading outfits and considerable gallery-practice ammunition have already been provided for and have been

sufficient to introduce this system of gallery practice into the service. Anticipating that the permanent Military Establishment will have the strength of about 300,000 it will be necessary to procure about 155 additional reloading outfits at an estimated cost of \$300 each, and gallery-practice ammunition and components therefor to the value of \$373,500.

NOTE.—This system of gallery practice displaces the use of .22 caliber rifles which were formerly used and permits the soldier to use the rifle regularly issued to him.

Small-arms experimental department, Frankford Arsenal..... \$15,000

The necessity for the maintenance at all times of a thoroughly up-to-date experiment department at Frankford Arsenal was clearly demonstrated during the war. This experiment department is charged with the development of new types of small-arms ammunition and the perfecting of old designs. This department also tests and reports upon designs and suggestions received from without the department. In order that this important and most necessary department may be continued during the next fiscal year it is estimated that \$15,000 will be required for ordinary operating expenses not provided for otherwise.

Summary of estimate under the appropriation, "Small-arms target practice, 1921-22."

Manufacture of small-arms ammunition	\$470,000
Manufacture of targets and target materials	55,000
Manufacture and purchase of ammunition and loading equipment for gallery practice.....	420,000
Small-arms experiment department, Frankford Arsenal.....	15,000
Total.....	960,000

Above total of \$960,000 may be subdivided as follows:

For manufacturing purposes.....	\$945,000
For experimental and development work.....	15,000
Total.....	960,000

The CHAIRMAN. We next come to "Manufacture of arms." I see that you are not asking for any less. How many million rifles have we on hand?

Col. O'LEARY. We have about 2,500,000.

The CHAIRMAN. And they are all either Springfields of 1903 or the Enfields of 1917-18?

Col. RICE. Yes, sir.

The CHAIRMAN. They all shoot the same kind of ammunition?

Col. RICE. Yes, sir.

The CHAIRMAN. What is the idea of asking for \$1,000,000 to continue the manufacture?

Col. RICE. That sum includes other items in addition to manufacture. As far as the manufacture is concerned it should be noted that the Army is using the 1903 rifle exclusively and the 1917 rifles are in stock for future emergency use. We are not intending to make spare parts or do anything with those 1917 rifles, although we are maintaining in storage manufacturing facilities, etc. There is an appreciable wastage of the 1903 rifle and the manufacture of spare parts has to be kept up, and unless a considerable number of complete rifles are manufactured each year the supply on hand will constantly decrease. It is also intended, as in the case of small-arms ammunition, to keep a skeleton organization in the country that knows how to manufacture this military weapon. There is no manufacturer of this rifle in addition to the Government.

The CHAIRMAN. I see.

Col. RICE. Now, then, in addition to the manufacture of the gun itself there are certain other subsidiary items which Col. O'Leary will give you.

Col. O'LEARY. The total estimate under the appropriation "Manufacture of arms, 1921-22," is \$1,000,000, apportioned as follows:

For the manufacture of Springfield rifles and spare parts and accessories therefor..... \$568,750

The estimated cost of a rifle complete with spare parts and accessories is \$35, and this sum will therefore be sufficient for the manufacture of only 16,250 model of 1903 rifles. There are approximately 400,000 of these rifles in the hands of troops and at schools and colleges, and if we estimate the life of the rifle to be 10 years, it is seen that this number is little more than one-third of the number required to maintain our present stock intact.

For the maintenance of the Rock Island Arsenal small-arms department..... \$6,000

The small-arms department at Rock Island Arsenal is now engaged upon the repair of rifles and machine guns. After July 1 no further work will be done in this department, with the exception of a very small repair program, and the manufacturing facilities will be slushed and kept in a state of readiness. This will require the expenditure of some money for labor and other expenses incident to upkeep, and it is believed that \$500 a month for the purpose is a very modest sum and very probably will not be quite sufficient. A similar sum will be required each year so long as this plant is kept.

For the care and preservation of small-arms gauges..... \$10,00

Practically all gauges used in the manufacture of rifles, pistols, and revolvers, accumulated by the Government during the war, have been or soon will be forwarded to Springfield Armory for storage. These gauges will all be checked and put in proper condition for storage, and will be maintained in a state of readiness so that they may be promptly issued in case they are needed for manufacturing operations. The maintenance of these gauges will require the expenditure of a small sum of money each year, and it is estimated that the sum of \$10,000 will be required for the fiscal year 1921.

For the maintenance, repair, and issue of small-arms pistols and revolvers.. \$305,000

It is estimated that this sum of money will be required during the fiscal year 1921 for the overhauling and repairing of all rifles, automatic pistols, bayonets, bayonet scabbards, bolos, bolo scabbards, and all other similar equipment procured under the appropriation "Manufacture of arms," which is in the hands of troops and loaned to colleges and other organizations. Of this sum it is believed that a total of \$37,500 will be required to cover contingent expenses in connection with the manufacture, repair, procurement, and issue of arms at the following-named armories and arsenals: Springfield Armory, Rock Island Arsenal, San Antonio Arsenal, New York Arsenal, Augusta Arsenal, Benicia Arsenal, Hawaii Ordnance Depot, Manila Arsenal.

For experimental and development work..... \$101,000

In order to keep abreast of the progress made by other armies in the development of small arms, it will be necessary to undertake considerable development work during the year. As far as can be foreseen now, it is anticipated that the sum estimated as necessary for this purpose will be utilized as follows:

Improving the service rifle and accessories therefor, \$10,000. The most important work under this subitem is the development of a receiver sight for the Springfield rifle. This development work has been under way for a considerable period, but to date satisfactory results have not been obtained.

Bayonets, \$2,000. This sum will be required for improving the present bayonet in minor particulars and for the fabrication of a sufficient number for test purposes.

Pistols and revolvers, \$2,000. This sum will be required in order to make minor improvements in the automatic pistol and to fabricate models for test purposes.

Telescopic musket sights, \$10,000. The present telescopic musket sight is far from satisfactory, and the development of a new model is now under way. From the progress which has been made to date it is hoped to have a sight which will be entirely satisfactory by the end of the next fiscal year. Rifles equipped with telescopic sights are used by snipers, and it is very necessary that our service be furnished with the very best possible sight obtainable.

Experimental and model shop at Springfield Armory, \$12,000. Springfield Armory is better equipped now than ever before to undertake experimental and development work on small arms of all types, in that there is a separate department which is charged with such work. Prior to and during the war considerable dependence had to be placed upon outside manufacturers for development work, such as Springfield Armory

is now equipped to do. In order to maintain this department so that experimental models of all kinds may be built and so that new inventions and improvements submitted from without the department may be properly tested and their real value determined, it is estimated that this sum of \$12,000 will be necessary for the coming fiscal year.

Semiautomatic rifles, \$50,000. A considerable amount of development work has heretofore been done with the end in view of obtaining a satisfactory semiautomatic rifle which can be used in a manner similar to the manner in which the model of 1903 rifle is now used. The French during the present war developed such a rifle and made quite extensive use of it. The French weapon, however, is not entirely satisfactory, and if this sum is made available, it is hoped that the Ordnance Department will be able to make considerable progress and possibly to develop a weapon which will be received favorably by the users. This sum, however, will not be sufficient for the fabrication of more than enough samples for test purposes, in case the development is successful enough to warrant such action.

Testing and experimental firing, \$15,000. There is considerable expense incident to the firing and testing of new models and devices, and this subitem is intended to cover such expenses. These expenses include necessary ammunition, clerical help, labor, etc., incident to such tests.

Miscellaneous expense, \$9,200. It is intended that this item will cover unforeseen expenses during the year, such as travel expenses for persons traveling in connection with business under this appropriation, and to supplement any of the above items which may be too small.

This estimate of \$1,000,000 under the appropriation "Manufacture of arms, 1921-22" may be subdivided as follows:

For manufacturing purposes.....	\$593, 950
For maintenance.....	305, 050
For experimental and development work.....	101, 000

Summary of the estimate under the appropriation "Manufacture of arms, 1921-22."

Manufacture of Springfield rifles.....	\$455, 000
Manufacture of accessories for rifles.....	113, 750
Maintenance of Rock Island Arsenal plant.....	6, 000
Small-arms gauges.....	10, 000
Maintenance, repair, and issue of small arms:	
Overhauling rifles.....	\$195, 030
Overhauling automatic pistols.....	54, 260
Overhauling bayonets.....	7, 000
Overhauling bayonet scabbards.....	4, 200
Repair of bolos.....	1, 670
Repair and replacement of bolo scabbards.....	850
Repair of trench knives.....	480
Repair and replacement of pistol magazines.....	4, 060
Contingent expenses at armories and arsenals.....	37, 500
	305, 000
Experimental and development work:	
Service rifles and accessories therefor.....	10, 000
Bayonets.....	2, 000
Pistols and revolvers.....	2, 000
Telescopic musket sights.....	10, 000
Experimental and model shop, Springfield Armory.....	12, 000
Semiautomatic rifles.....	50, 000
Testing and experimental firing.....	15, 000
	101, 000
Miscellaneous expenses.....	9, 200
Total.....	1, 000, 000
Above total of \$1,000,000 may be subdivided as follows:	
For manufacturing purposes.....	593, 950
For maintenance.....	305, 050
For experimental and development work.....	101, 000
Total.....	1, 000, 000

The CHAIRMAN. I wish you would put into the hearing, in connection with my question, how many rifles you have on hand, how many pistols you have on hand; how many machine guns, heavy, and how many machine guns, light.

Mr. MCKENZIE. Mr. Chairman, will the record show the type of machine guns and the number of each, and its use?

The CHAIRMAN. Under the item "Automatic rifles" kindly do that; and also, if you will, put into the hearings data on the item of "Ordnance stores"; what you have in the nature of big ammunition, and also at some appropriate place the number of big guns you have on hand.

Col. RICE. Artillery?

The CHAIRMAN. Yes.

Col. RICE. Yes, sir.

The CHAIRMAN. Thank you.

Col. RICE. We will put that in; that is, all separate items.

(The statement above referred to is as follows:)

Machine guns, automatic rifles, shoulder rifles, pistols, and revolvers on hand Mar. 1, 1920.

United States rifle, caliber .30, model of 1903.....	585,629
United States rifle, caliber .30, model of 1917.....	2,000,000
Gallery practice rifle, caliber .22, model of 1903.....	9,448
Winchester single-shot rifle, caliber .22.....	7,324
Automatic pistol, caliber .45, model of 1911.....	201,038
Revolver, Colt, caliber .45, model of 1917.....	55,620
Revolver, Smith & Wesson, caliber .45, model of 1917.....	42,485
Rifles, caliber .30, models of 1896 and 1898, Krag (obsolete).....	86,517
Carbines, caliber .30, model of 1899, Krag (obsolete).....	12,146
Russian rifles.....	38,207
Ross rifles.....	6,996
Browning machine gun, model of 1917.....	58,825
Browning aircraft machine gun, model of 1918.....	3,050
Lewis machine gun, aircraft, caliber .30.....	15,053
Lewis machine gun, aircraft, caliber .30 (obsolete).....	58
Marlin aircraft machine gun, caliber .30.....	20,137
Vickers machine guns, aircraft, caliber .30.....	6,990
Vickers machine guns, aircraft, caliber 11-mm.....	1,700
Browning tank machine gun, caliber .30.....	1,692
Marlin tank machine gun, caliber .30.....	2,646
Colt machine gun, model of 1902 (obsolete).....	3
Colt machine gun, model of 1917 (obsolete).....	1,427
Benet Merrie machine rifle, model of 1909 (obsolete).....	488
Maxim automatic machine gun, model of 1904 (obsolete).....	245
Hotchkiss machine gun, model of 1916 (obsolete).....	
Hotchkiss machine gun, model of 1914 (obsolete).....	1,022
Chauchat machine rifle, model of 1915, 8-mm. (obsolete).....	3,667
Chauchat machine rifle, model of 1918, caliber .30 (obsolete).....	5
Browning automatic rifle, model of 1918.....	75,318

Field Artillery (guns and carriages) on hand Mar. 1, 1920.

75-mm. gun (American model of 1916).....	808
Carriages.....	363
75-mm. gun (British model of 1917).....	909
Carriages.....	921
75-mm. gun (French model of 1897).....	3,854
Carriages.....	¹ 4,104
4.7-inch field guns.....	² 473
Carriages.....	² 481

¹ Short 500 recuperators.

² Includes 56 4.7-inch guns on hand at beginning of war, Apr. 6, 1917.

60-pounder guns (complete).....	200
155-mm. guns.....	954
Carriages.....	1, 231
155-mm. howitzers.....	3, 009
Carriages.....	2, 121
6-inch guns, Mark XIX (British).....	100
6-inch gun bodies, Mark XIX (British).....	50
8-inch howitzers and carriages:	
Mark I.....	351
Mark VII.....	115
Mark VIII ¹	50
9.2-inch howitzers and carriages:	
Mark I.....	26
Mark II.....	19
240-mm. howitzers.....	240
240-mm. howitzer carriages and transport vehicles.....	320
3-inch antiaircraft guns.....	169
3-inch antiaircraft mounts, trailer.....	120

*Principal items of Field Artillery ammunition (in storage, complete rounds) on hand
Mar. 1, 1920.*

Shell, H. E. C. S.:	
Mark I for 75-mm. gun.....	5, 490, 490
Pt. fused for 4.7-inch gun.....	135, 256
For 60-pounder gun, British.....	(¹)
Mark III for 155-mm. gun.....	201, 480
Mark V for 155-mm. gun.....	1, 000
Mark XVI for 155-mm. gun.....	1, 000
Mark I for 155-mm. howitzer.....	1, 002, 515
Mark IV for 155-mm. howitzer.....	500
Mark XVII for 155-mm. howitzer.....	1, 000
For 8-inch howitzer, pt. fused.....	400, 972
For 8-inch gun and howitzer.....	22, 619
For 9.2-inch howitzer.....	108, 410
For 240-mm. howitzer.....	1, 470
Shell, H. E., for 3-inch antiaircraft gun, Mark I, model of 1918.....	
Shrapnel, common:	
Mark I for 75-mm. gun.....	8, 026, 075
For 4.7-inch gun.....	291, 380
For 60-pounder gun, British.....	(¹)
For 155-mm. gun or howitzer with fuse.....	11, 640
For 155-mm. gun or howitzer without fuse.....	183, 406
Shrapnel, for 3-inch antiaircraft gun, model of 1918.....	32, 215

The CHAIRMAN. Now, "Ordnance stores and supplies."

Col. RICE. I have changed it so as to read as follows [reading]:

ORDNANCE STORES AND SUPPLIES, 1921-2.

For the manufacture, test, purchase, and maintenance of sighting devices for airplane bombs, of carrying and releasing devices for airplane bombs; for overhauling, cleaning, repairing, and preserving ordnance and ordnance stores in the hands of troops and at the arsenals, posts, and depots; for purchase and manufacture of ordnance stores to fill requisitions of troops, \$1,753,255.

Original estimate.....	\$1, 655, 000
Supplemental estimate.....	98, 255
	<hr/> 1, 753, 255

Matter in italic indicates additional wording desired to be incorporated in the wording of "Ordnance stores and supplies."

Certain things which have been heretofore articles of ordnance stores and supplies were transferred to the Quartermaster Corps. They are now quartermaster stores, and therefore, in the preparation of this estimate, we have not included anything for them. They will be presented under their proper head by the Quartermaster

¹ Shipments from England not yet reported to Ordnance Field Service. Total expected is as follows: H. E., complete rounds, 33,500; shrapnel, complete rounds, 33,500.

Department. The wording of the appropriation has been changed so as to exclude these items. There are one or two other changes in there as the reading will show. They are necessary to cover certain aircraft armament devices. The money for these devices has heretofore been carried in this appropriation, as it was the only one considered applicable. The change in wording is simply to clearly indicate that this appropriation is to cover these articles of aircraft armament and specifically their manufacture, test, purchase, and maintenance.

The CHAIRMAN. What have you done with aircraft ordnance? Have you been able to synchronize all of our machine guns with the flying machine?

Col. RICE. We have synchronized the Morlin gun and the Browning.

The CHAIRMAN. How about the Lewis gun?

Col. RICE. The Lewis gun is not used as a synchronized gun. It is used as a free gun. The Vickers has also been synchronized.

The CHAIRMAN. Will you kindly pass on to the next item?

Col. BORDEN. Mr. Chairman, the total amount of the estimate for "Ordnance stores and supplies," on page 54, is \$1,655,000. We have submitted a supplemental estimate of \$98,255, making the total estimate now \$1,753,255. This is divided as follows:

For manufacture.....	\$284,055
For experiment and development work.....	175,000
For maintenance (of which ammunition is \$1,244,200).....	1,294,200
The estimate submitted for manufacture, \$284,055, is divided as follows:	
200 modified Michelin bomb sights.....	\$20,000
Modification of 200 Mark I-A bomb sights.....	2,000
5,041 bomb racks and controls.....	262,055

The estimate submitted for experiment and development work, \$175,000, is divided as follows:

Development of bomb sights.....	\$45,000
Development of bomb racks and bomb-rack controls.....	30,000
Testing of bomb sights.....	20,000
Testing of bomb racks and bomb-rack controls.....	10,000
Development of pyrotechnic projector and grenade thrower.....	20,000
Experimental development of pack outfits for Browning machine guns....	50,000

The estimate for maintenance, \$1,294,200, is divided as follows:

Maintenance of bomb sights, bomb racks and bomb-rack controls.....	\$50,000
Maintenance of war-reserve ammunition.....	1,244,200

Referring back to the manufacturing items:

(1) The sum of \$20,000 is requested for the manufacture of 200 modified Michelin bomb sights, these to be used to equip observation and bombardment squadrons of the Air Service. The Michelin sight was the most successful bomb sight which was used in bombing over the lines during the past emergency. It was superior to the bomb sight which is now the standard equipment of our Air Service. A modification of this sight is now under development, in order to make the Michelin sight applicable for our use, and it is estimated that this development will be completed in time to initiate the manufacture of these modified sights early in the next fiscal year.

(2) As it will take over six months to manufacture these sights, an estimate has been made for the modification of 200 Mark I-A bomb sights. The Mark I-A sight is our present standard sight, but this sight has certain defects which can be corrected. These modifications include recalibrated scales and new levels. It is believed advisable to modify these sights in addition to manufacturing the 200 modified Michelin sights as they will be available before the modified Michelin sights can be produced and, after the modified Michelin sights become available, they can be used as a reserve and for training. In this connection, it is believed essential that the best possible bomb sights should be made available for the use of our Air Service, as their cost, as compared to the airplane and bombs, is slight and every effort must be made to improve the accuracy of bombing.

(3) The number of bomb racks and bomb rack controls which must be manufactured may appear to be somewhat large, but, in several instances, more than one rack is required per plane; for the Martin bomber, 14 racks of one type, and for the

Giant plane, 48 racks of one type will be required per plane. These racks and controls are to be used in equipping 115 bimotor bombing planes, 50 observation, 50 attack and 20 Giant bombing planes, which the Air Service estimate will be produced next year, and, in addition, the equipment of 416 modified DH-4 planes.

Referring back to development and equipment items:

(1) The amount estimated to be used in the development of bomb sights will be used in the continuation of the development of gyroscopic stabilization of the modified Michelin sight and the initiation of the development of a universal bomb sight. This universal sight will be so adjustable that it can be used with any bomb and with any plane, for bombing across the wind and over land or water. As bombing with present sights will give only 50 per cent hits in a target in size equal to 2 per cent of the altitude, the need for more accurate sighting devices is apparent.

(2) For the development of bomb racks and bomb rack controls the sum of \$30,000 has been asked. This amount will cover the development of an automatic trail control to permit the release of bombs successively by an automatic mechanism set in motion by the bomber and regulating, of itself, the intervals between bombs. For new bombing planes, racks must be developed for suspending bombs inside the fuselage or other structures of the plane. The Air Service is designing a bomber requiring three such inside suspensions. The development of these mechanisms and their controls must be undertaken by this department with the funds estimated.

(3) The amount estimated to cover the testing of bomb sights will be used to complete the testing equipment for these sights, the installation of instruments to be used in the tests, the construction of scales and measuring instruments to be used in various parts of the work, the construction of instruments for testing bomb sights statically and the alteration of such bomb sights in tests as are needed in obtaining information regarding the principles of synchronization, of independent stabilization and the various methods by means of which attempts are made to obtain the true vertical in connection with the use of bomb sights.

(4) \$10,000 asked for in connection with the testing of bomb racks and bomb rack controls will cover the cost of testing of new devices to destruction, the cost of testing installations of controls and racks and the actual operation of racks in test.

(5) The item, \$20,000, estimated to be used in the development of a pyrotechnic projector and grenade thrower is to be used in following out recommendations of the Pyrotechnic Board appointed by War Department orders, which board has recommended the development of pyrotechnic projector, and also to carry out suggestions of the Infantry and Cavalry board in regard to the development of a grenade thrower. An attempt will be made to combine these two devices into one. The first object is to obtain a device which will allow simplification of Army pyrotechnics, and the second to obtain a device which will give a more satisfactory projector for grenades than the present one which requires the use of the rifle and grenade discharger.

(6) The amount, \$50,000, asked for to be used in experimental development of pack outfits for Browning machine guns is included under the estimate for Ordnance, Stores and Supplies, as the Ordnance Department has been requested in a memorandum from the Office of the Chief of Staff to complete the investigations already begun by this department on the development of satisfactory specifications and designs of pack equipment for the Browning machine gun. This work is well under way. Initial equipment is under manufacture at a cost of over \$40,000, and, in order to complete the entire project, it is estimated that \$50,000 will be needed.

Referring back to maintenance items:

(1) The maintenance items cover, first, the maintenance of bomb sights, bomb racks, and bomb rack controls for the Army, and includes the upkeep, repair, and supply of spare parts for those devices in the hands of Air Service squadrons and the storage of those devices in our arsenals.

(2) The major item under maintenance is for the maintenance of war reserve of ammunition. The amount asked for is that needed to overhaul and prepare for storage that part of the war reserve which can not be taken care of by funds which are now available.

Col. RICE. I want to bring that out particularly, Mr. Chairman, because this is for the maintenance of artillery ammunition. Artillery ammunition is not appropriated for in this committee and it was put into this when it was prepared because of the fact that it is for the maintenance of ordnance and ordnance stores. We have not asked the Appropriations Committee for the appropriation of money for this enormous amount of ammunition we have on hand. I am free to admit that I do not know whether it belongs in this bill or in another.

The CHAIRMAN. Well, we appropriate for the ammunition and for the ordnance for the National Guard, and so much of it as appertains to the National Guard use would be carried in this bill.

Col. RICE. If the committee is willing it can do that, but I brought up the question because I did not know.

The CHAIRMAN. You have plenty of this ammunition on hand—you have testified to that fact—for the use of the National Guard?

Col. RICE. Yes, sir.

The CHAIRMAN. So, I rather think it is advisable to get the money from the Appropriations Committee.

Col. RICE. From this committee?

The CHAIRMAN. No; from the Appropriations Committee. You have plenty of this material for the National Guard and that is the only reason that would enable us to appropriate for that purpose at all. We have no jurisdiction over the ammunition for field artillery for the Regular Army.

Col. RICE. Well, the way this appropriation is worded it is good for the maintenance of ordnance and ordnance stores of any kind.

The CHAIRMAN. But you have testified that you have plenty of that kind of ordnance on hand?

Col. RICE. This is for maintenance.

The CHAIRMAN. Oh, "Maintenance"; how much is for "Maintenance"?

Col. RICE. A little over \$1,000,000.

Mr. GREENE. Can you arrange it some way so that you can show how much of the \$1,000,000 will be used for the National Guard and how much for the Regular Army ammunition?

Col. RICE. No.

Mr. GREENE. That is a good way to show the fallacy of the division?

The CHAIRMAN. We have always contended that it could not be justified; that shows how ridiculous the division is.

Col. RICE. It is, I believe, absolutely obligatory that the Government should appropriate this amount of money to take care of this ammunition.

The CHAIRMAN. "National trophy and medals for rifle contests," \$10,000—that is the same amount that is carried along from year to year.

Col. RICE. It is the same as has always been carried. It requires no comment.

The CHAIRMAN. And there is going to be a big contest at Camp Perry this year.

Now, let us take up "Automatic rifles."

Col. RICE. Mr. Chairman, we would like to have the clause in the bill modified to read as follows:

Automatic machine rifles, 1921: For the purchase, manufacture, test, repair, and maintenance of automatic machine rifles, or other automatic or semiautomatic guns, including their mounts, sights, and equipments, and the machinery necessary for their manufacture, *the funds appropriated to remain available until June 30, 1922, \$1,000,000.*

Matter in italic indicates additional wording desired to be incorporated in the wording of "Automatic machine rifles."

Col. BORDEN. Col. Rice has asked that "Automatic rifles" and "Tanks" be made two-year appropriations. If this is effected, the *underscored* words may be omitted.

The estimate submitted is for \$1,000,000; this is divided as follows:

For manufacture.....	\$545,600
For experimental and development work	267,800
For maintenance.....	186,600

The estimate submitted for manufacture, \$545,600, is divided as follows:

400 improved Browning aircraft machine guns, including tools, gauges, jigs, and fixtures.....	\$120,000
150 37 mm. full automatic cannon.....	300,000
Antiaircraft machine-gun appliances.....	18,775
Incorporation of improvements in ground types of Browning machine guns and automatic rifles already manufactured, and accessories therefor.....	39,000
Browning tank machine guns.....	42,825
Gauges, tools, fixtures, etc., required in manufacture of machine guns and automatic rifles.....	25,000

The estimate for experimental and development work, \$267,800, is divided as follows:

Modifying the present design of Browning aircraft machine gun and refinement of design in existing types of aircraft machine guns.....	\$50,000
Development of .50-caliber aircraft machine gun.....	50,000
Development of accessories for aircraft machine guns.....	10,000
Testing of aircraft machine guns.....	12,800
Improvements on machine guns and automatic rifles of all ground types...	25,000
Research work in the improvement of machine-gun barrels.....	15,000
Development of antiaircraft machine-gun material.....	15,000
Development of machine-gun tripods.....	15,000
Development of .50-caliber machine gun, ground type, and accessories therefor.....	35,000
Testing of experimental material pertaining to ground type machine guns...	10,000
Experimental and model shop at Springfield Armory.....	20,000

Development of panoramic sights for machine guns, \$10,000.

The estimate submitted for maintenance, \$186,600, is not subdivided.

Referring back to the manufacturing items:

(1) The manufacture of the 400 improved Browning Aircraft machine guns is to be undertaken in order that a sufficient number of these guns may be produced to equip a group to enable a service test to be conducted on this practically new design of aircraft gun. It is also necessary to obtain a complete file of all manufacturing operations to train a manufacturing organization in the manufacture of the improved gun, to prepare operations tables, and special tools and gauges, so that in the event of an emergency requiring the manufacture of more machine guns all data will be complete and in the hands of the Ordnance Department, available for distribution.

(2) The manufacture of 150 37 mm. full automatic cannon will be undertaken to meet a request from the Air Service for these weapons. It is estimated that these will equip the new large planes which the Air Service are expecting to build next year. There are at present experimental models of this type of cannon on hand. It is expected that the development of this cannon will be completed this year, and that the manufacture of the 150 cannon can be initiated early in the next fiscal year.

(3) The money asked for for the manufacture of antiaircraft machine gun appliances is for the purpose of manufacturing a sufficient quantity of antiaircraft sights to fill the requirements for these sights as calculated in accordance with instructions received from the General Staff. There are only 500 sights which will have been completed by the end of this fiscal year. The total requirements are 4,255 leaving a requirement for 1921 of 3,755.

(4) Under "Manufacture," \$39,000 has been asked for in order to incorporate improvements in the ground type machine guns and automatic rifles already manufactured. These improvements consist of the addition of bottom plate stirrups and panoramic sight brackets to the Browning machine gun and front sight protectors to the Browning automatic rifles. A certain number of these improvements will be made this fiscal year; the sum asked for is to complete the work. This is part of the general program for supplying material to be used in overhauling war material prior to placing it in storage.

(5) The money asked for for the manufacture of the Browning tank machine guns will cover the manufacture of a sufficient number of these guns to equip tanks authorized and to cover wastage and consumption of these guns during the fiscal year. Certain of these guns are being manufactured out of present appropriations, and the sum requested is to complete the project.

(6) The money asked for for gauges, tools, fixtures, etc., will cover the overhauling, storing, and cataloguing of gauges, tools, fixtures, etc., which have been retained and which pertain to the manufacture of Browning machine guns and automatic rifles.

Referring back to the "Experimental and development" items:

(1) Of the \$50,000 requested for the modification of Browning aircraft machine guns and refinements of design in existing types of aircraft machine guns \$40,000 will be used in the modification of Browning aircraft machine guns now available. The modification of these guns is now under way, but it is estimated that \$40,000 will be needed next year in addition to the funds now available in order to complete the work. The remaining \$10,000 will be expended in the development of refinements in existing types of guns. An example of such development is in the obtaining of a higher rate of fire and additional magazine capacity for the Lewis machine gun.

(2) Fifty thousand dollars has been asked for for the development of the .50-caliber aircraft machine gun and \$35,000 has been asked for for the development of .50-caliber ground types of machine guns. It is expected that these funds will complete the development of the .50-caliber guns. The development of these guns has been initiated, but can not be completed with the funds now available. The amounts asked for will also cover the development of accessories, such as links, tripods, sights, etc., for this particular gun.

(3) Ten thousand dollars asked for under development of accessories for aircraft machine guns covers the development of loading machines, rounds counters, rounds indicators, oil lubricators, and electric heating devices.

(4) Twelve thousand eight hundred dollars has been asked for for testing aircraft machine guns and \$10,000 has been asked for for the testing of experimental material pertaining to ground types of guns. These amounts will cover such tests as those to determine the relative efficiency of American machine guns as compared with the efficiency of machine guns of foreign manufacture.

(5) Twenty-five thousand dollars asked for for the development of improvements to ground type machine guns and automatic rifles will cover the development of a new machine-gun sight, the development of a flash hider, development of condenser, the development of a belt guide to do away with placing of ammunition box on tripod, and the development of an expendable machine-gun ammunition box.

(6) It has been estimated that the development and research work for the improvement of machine-gun barrels will cost \$15,000 next year. This work is being carried on for the purpose of increasing the accuracy and life of machine-gun barrels.

(7) Under the development of antiaircraft machine-gun material, the Ordnance Department will undertake the development of adapters designed for use with existing types of machine gun tripods, special tripods for antiaircraft work, antiaircraft sights, and mechanical devices to be used in the training of antiaircraft machine gunners.

(8) The sum of \$15,000 will cover development work to be undertaken on machine-gun tripods. Tripods furnished during the war were quite satisfactory, but certain improvements have been suggested by the users of the tripods and by others. It has been stated that the tripods are too light and allow an excessive amount of vibration. This vibration may be caused by the 13 adjustments required in setting it up. It has also been suggested that the tripods are not adaptable for use in connection with firing against aerial targets. This money will be used in developing a modification of either the model 1917 or model 1918 tripod so that it can be used to greater advantage.

(9) The item \$20,000 asked for the experimental and model shop at Springfield Armory is a very important one. By means of this shop, new models are developed, and preliminary designs are tried out. The amount indicated in the estimate will cover the procurement of items of target material, general machine tool equipment, chronographs, gauges, cameras, time-recording devices, etc., which are all needed in the experimental and development work on machine guns.

(10) The present panoramic sights for machine guns have been tested and have been found to have certain mechanical defects. The item \$10,000 has been asked for in order that these sights may be studied and that a modification of them may be developed. The work has been started, but in order to complete it the amount indicated is needed.

The amount asked for for "Maintenance" is that which it is estimated will be needed to complete the overhauling, repairing, and preparation for storage of approximately 102,900 machine guns of all types. It is estimated that a total of \$411,600 is needed for this work, of which there is available for this year's funds \$225,000. This leaves \$186,600 which must be appropriated for next year in order that the work may be completed.

Mr. McKENZIE. What is this two hundred and some odd thousand dollars for—for experimental work?

Col. RICE. \$267,800—

Mr. McKENZIE (interposing). I just wanted to know if you were going to develop the different types of gun?

Col. RICE. This is mainly development for aircraft use, not for ground work, although there is some experimental work in the development of the ground type. Of course, you understand that any experimental work, as far as ground work is concerned, does not under ordinary conditions mean the manufacture of any considerable quantity.

Mr. GREENE. I understood that you already have experimented with the present Browning?

The CHAIRMAN. The heavy Browning.

Mr. GREENE. And some other machine.

Col. RICE. We have also, for some time, been investigating a .50-caliber Browning.

Mr. GREENE. There is something about the recoil jamming or something of that kind.

Col. RICE. We have no knowledge of it.

The CHAIRMAN. It is a caliber of gun that carries a cartridge about the size of—

Col. RICE (interposing). Yes, sir; it is a particularly good gun for aircraft.

Mr. McKENZIE. Along that line, General, I read a statement about some board or some officer who has practically discovered, to his satisfaction, that our 3-inch guns or 75-millimeters did not do very much good. He is going to make another kind of a gun which will be very much better than the 3-inch or 75-mm. Is there anything to it, or is a newspaper story?

Col. RICE. There was a board of officers convened right after the war to investigate the artillery proposition very thoroughly in connection with the Allies. They submitted a report. The War Department approved that report, and based on that we are asking the Appropriations Committee to make appropriations for the development of new and better artillery.

The CHAIRMAN. Was not the French "75-mm." gun considered the best gun for all-around work that was used by any of the warring countries?

Col. RICE. It did the best work of any light gun of the Allies; there is no question of that. Also, there is no question that it is not a modern gun at the present day, because the French all through the war and ever since have been trying to get a better gun. It is our standard gun, and I expect we will use it if we have any cause for many years to come. There is no question that it is not a modern piece. It has not the power and it has not a lot of things that are being developed in other armies.

Mr. McKENZIE. Colonel, in this statement that I read—one reason did not appeal to me very strongly as a practical proposition and that was that the Germans had a gun that would shoot, I think, probably a couple hundred feet further than the "75." Now, while I realize that a quarter of a mile or a difference in range would be material, yet, in the nature of the use of field artillery I do not think that a difference of several hundred feet counts for very much?

Col. RICE. The difference between the German 77-mm. model of 1916 and the French 75-mm. model of 1896 is something like two or three thousand meters.

The CHAIRMAN. I heard the statement made when I was on the other side that the Germans made a great many of their "77's" out of the French "75's" by making the bore just two millimeters larger?

Col. RICE. They did; they also had a lot of Belgian field pieces that they remodeled, that were made way back in the seventies. We got back, when we went into Germany some of the modified French pieces and the Germans also had one model of their own of practically the same range as the French "75" model of 1896.

The CHAIRMAN. Well now, by enlarging the bore but two millimeters, was there such a vast difference in the range of the gun?

Col. RICE. We noted no increase in the caliber of the French gun modified by the Germans; they simply used the shorter range gun.

Mr. GREENE. Is it true that gun for gun on a general average the Germans outranged us?

Col. RICE. I think it is.

Mr. GREENE. They outranged the Allies?

Col. RICE. Yes, sir; I think it is true.

Mr. GREENE. I heard the same thing.

Col. RICE. There are two items on page 53 that we have not touched. They have been carried for years and I hope the first may be continued. It is, "*Provided*, That all material purchased under the appropriations of this act for the Ordnance Department of the United States Army shall be of American manufacture, except in cases when, in the judgment of the Secretary of War, it is to the manifest interest of the United States to make purchases abroad, which material shall be admitted free of duty."

The second is, "*Provided*, That the Chief of Ordnance of the United States Army is authorized to employ in the District of Columbia, out of the appropriations made in this act for designing, procuring, caring for, and supplying ordnance and ordnance stores to the Army, such services, other than clerical, as are necessary for carrying out these purposes."

The CHAIRMAN. You would withdraw that second proviso?

Col. RICE. Yes, sir.

The CHAIRMAN. You have no further use for it now?

Col. RICE. It is also carried in the appropriations for fortifications, and our needs have been presented to that committee.

The CHAIRMAN. Is that all you have to say?

Col. RICE. Yes, sir.

The CHAIRMAN. We are very much obliged to you, and were glad to hear what you had to say.

Gentlemen of the committee, the officers of the Ordnance Department also submit the following proviso, so that the committee can, if they desire, adopt the expedient of reappropriating from the unexpended balances that the Ordnance Department has on hand. We may want to do so without making new appropriations for the coming fiscal year. The proviso is as follows:

Provided, That unexpended and unobligated funds available June 30, 1920, under any appropriations heretofore made for the Ordnance Department in Army appropriation acts are hereby reappropriated under the appropriations and in the amounts named below, in addition to appropriations heretofore made which are available until June 30, 1921.

(Thereupon, at 5.45 o'clock p. m., the committee adjourned to meet at 10.30 o'clock a. m. to-morrow, Thursday, April 1, 1920.)

SUBCOMMITTEE OF THE
COMMITTEE ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Thursday, April 1, 1920.

MOTOR TRANSPORT CORPS.

The committee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. Gen. Drake, the Chief of the Motor Transport Corps, is here this morning. He will explain that part of the item on page 27 for the transportation of the Army and its supplies that relates to the Motor Transport Corps. We will be glad to hear your explanation of the estimate, General.

Gen. LORD. Mr. Chairman, preliminary to Gen. Drake proceeding, I would like to state that the recommendation has been made to the Secretary of War covering the estimates that will be submitted by Gen. Drake and Gen. Hines, but that recommendation has not yet been approved, and I will read into the record what has been approved and then Gen. Drake is at liberty to proceed to make his own presentation in regard to the amount of money he thinks he, himself, will need. If any modification is made by the Secretary of War I will note that in the record later.

The estimate for an army of 299,000 men is as follows: Motor Transport, \$16,438,237.33.

The CHAIRMAN. Have you any estimates for a strength of 175,000?

Gen. LORD. I have that here. The estimate for the Transportation Service is \$57,288,422. The total for the Motor Transport Service and the Transportation Service under this item of transportation of the Army and its supplies is \$73,326,659.33.

For an army of 225,000 enlisted strength the amount estimated for the Motor Transport Service is \$13,410,589. For the Transportation Service, \$50,774,021, or a total for transportation of the Army and its supplies of \$64,184,610. For a strength of 200,000 enlisted men the estimate for the Motor Transport Service is \$12,143,889; for the Transportation Service, \$48,057,990, or a total for transportation of the Army and its supplies of \$60,201,879. For an enlisted strength of 175,000 men the estimate for the Motor Transport Service is \$10,878,707; for the Transportation Service, \$45,382,859, or a total estimate for the transportation of the Army and its supplies of \$56,261,566.

**STATEMENT OF BRIG. GEN. C. B. DRAKE, CHIEF MOTOR
TRANSPORT CORPS, ACCOMPANIED BY COL. EDGAR S.
STIEGER.**

Gen. DRAKE. Mr. Chairman, I would like to make a preliminary statement before proceeding to the details of the estimate.

In presenting the estimates for the Motor Transport Corps for the fiscal year 1921 I would like to preface my remarks with a few words as to the exact nature of the functions, activities, and duties of the Motor Transport Corps, a subject not clearly understood by the majority of our people, or by Congress, or, it may be added, even by the personnel of the Army itself.

The Motor Transport Corps is the organization designed to furnish motor transportation service for the Army. It occupies the same position in military life as the taxicab company or trucking concern in commercial life. It designs and supplies the motor vehicles for the Army and operates them. It must necessarily furnish them with material necessary for their operation, such as gasoline, oils, tires, spare parts, and accessories. It must keep the vehicles serviceable, and must therefore maintain and operate repair shops and service stations. It must train personnel necessary for its work, such as chauffeurs, and mechanics.

Now, although it is charged with furnishing this motor transportation service, and must perform the motor transport work for the Army, it does not determine what this work shall be. That is a function of the commanding authorities, from the Secretary of War down. The Motor Transport Corps does not determine what work it shall do, it simply performs to the best of its ability and resources the work it is called upon to do by the proper authorities.

Therefore, these estimates are based upon the extent of the motor transportation work that appears to be contemplated in the policies of the War Department for this period, and any change in these estimates will necessarily effect a modification of these policies. In other words, the amount of motor transport work that can be performed is controlled primarily by the appropriation made therefor, and any War Department policy must conform thereto. And this holds true, no matter to what agency in the Army the motor transportation work may be intrusted.

The estimates for the fiscal year 1921 were based on the number of vehicles which were authorized for retention and operation with an Army of 200,000 men. This estimate has been worked out pro rata on that basis, with the necessary overhead. We have estimates for an Army of 175,000 men, for an Army of 200,000 men, for an Army of 225,000 men, and for an Army of 300,000 men.

The estimate for an Army of 175,000 men and for the other strengths mentioned is just double the figures, in each case, that were given by Gen. Lord. That means that there was a 50 per cent cut in all those estimates.

I would like to call attention to the fact that in addition to performing that service, and making the payment for the spare parts and accessories that heretofore devolved upon the appropriations of the Motor Transport Corps, under existing instructions the Motor Transport Corps must furnish gasoline and oil and all of what are known as Class A supplies, which were heretofore furnished from the appropriations of the Quartermaster Corps. It is believed that the figures that were submitted for the operation of the vehicles authorized to be held by the Motor Transport Corps are as small as can be made and have the Motor Transport Corps service of the Army operate efficiently.

The CHAIRMAN. How many vehicles have you on hand at this time?

Gen. DRAKE. We have 86,373. That includes automobiles, ambulances, trucks—light and heavy—motor cycles, bicycles and trailers.

The CHAIRMAN. I suppose you have considerable surplus?

Gen. DRAKE. This is the total number of vehicles on hand. A surplus will later be declared.

The CHAIRMAN. From this total?

Gen. DRAKE. From this total; yes, sir.

The CHAIRMAN. This total was based on an estimate of how many men?

Gen. DRAKE. This was the accumulation, due to the war.

Mr. CALDWELL. What was left over after you scrapped the worn-out ones and had given thousands of them to various departments, under congressional action—this is what is left?

Gen. DRAKE. Yes, sir; except that there are still some unserviceable vehicles that we have not sold.

The CHAIRMAN. You will declare a further surplus when you know the exact strength of the personnel that will be provided for by Congress under this bill?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. So that there is the possibility of the sale of a good many of these vehicles as surplus; or will you distribute them under the laws which authorize you to distribute them to the various departments of the Government?

Gen. DRAKE. They will probably be distributed to the various departments except such as are unserviceable, machines which they do not care to accept.

The CHAIRMAN. What is the value to-day of the regulation motor trucks?

Gen. DRAKE. It varies with the kind of truck. The small truck, that is, the three-quarter and the one ton truck would be about \$1,800 complete; the ton-and-a-half truck would approximate \$3,400; and the heavy truck about \$4,200. That is taking an average of the original cost.

The CHAIRMAN. Are all the manufacturers charging about the same price?

Gen. DRAKE. No, sir; they vary considerably.

The CHAIRMAN. Could you put in the hearing the names of the principal manufacturers and the prices they charge for the standard trucks you are using?

Gen. DRAKE. Yes, sir.

MOTOR TRANSPORT CORPS, SERVICE DIVISION, REQUIREMENTS AND STATISTICS
BRANCH.

*Chart showing cost prices of standard and approved types of motor vehicle equipment
(based upon data furnished by Motors and Vehicles Division, General Staff).*

[Chart No. 251, compiled by HAH. Checked by EV and NB. Approved by A. O. G. Published Oct. 31, 1919.]

Line No.	Type No.	Name.	Symbol.	Price.
1	Type 1.	Passenger cars:		
2		Medium, open, Dodge.....	DT.....	\$869.00
3		Medium, closed, Dodge.....	DS.....	970.00
4		Heavy, open, Cadillac.....	CT.....	2,298.00
5		Heavy, closed, Cadillac.....	CL.....	3,321.85
6	Type 2.	Light delivery trucks:		
7		1-ton, light delivery, Dodge (standard).....	DD.....	997.41
8		G. M. C. (standard).....	AA.....	1,225.00
9		1-ton, White, Tebo (approved for standard).....	AA.....	2,280.00
10	Type 3.	1½ and 2 ton trucks:		
11		White, TBC (standard).....	A.....	2,280.00
12		Garford (approved for standard).....	A.....	2,730.00
13		Packard (approved for standard).....	A.....	2,685.00

Chart showing cost prices of standard and approved types of motor vehicle equipment
(based upon data furnished by Motors and Vehicles Division, General Staff—Con.)

Line No.	Type No.	Name.	Symbol.	Price.
14	Type 4.	3 and 4 ton trucks:		
15		Standardized "B" (standard).....	B.....	\$4,100.00
16		F. W. D. (standard).....	TT.....	3,080.00
17		Riker (approved for standard).....	B.....	4,462.00
18		Mack, 3½-ton (approved for standard).....	B.....	3,840.00
19	Type 5.	5-ton trucks or over:		
20		Mack, 5½-ton (approved for standard).....	B.....	4,240.00
21	Type 6.	Motor cycles:		
22		Harley-Davidson (solo) (standard).....		325.00
23		Harley-Davidson (side car) (standard).....		100.00
24		Indian (solo) (approved for standard).....		319.00
25		Indian (side car) (approved for standard).....		95.50
26	Type 7.	Ambulances:		
27		G. M. C.....	AAA.....	1,721.91
28		Bicycles, Westfield.....		33.96

Chart showing cost price of nonstandard motor vehicles in the Army. (To be used by
surveying officers in the valuation of unserviceable equipment.)

[Chart No. 208-A, sheet 1. Compiled by H. H. Checked by AGW and NEB. Qk'd by C. G. 4. Revised
Oct. 1, 1919.]

	Name of vehicle.	Capacity.	Manufacturer's name.	Cost of chassis.	Cost of body, sills, mounting, etc.	Total cost.
1	Passenger cars:					
2	Abbott-Detroit.		Abbott-Detroit Motor Car Co.			
3	Bulck.		Bulck Motor Co.			\$795.00
4	Briscoe.		Briscoe Motor Corporation.			825.00
5	Cole.	8 passenger.	Cole Motor Car Co.			2,798.00
6	Crow-Elkhart.		Crow-Elkhart Motor Co.			995.00
7	Chalmers.		Chalmers Motor Car Co.			
8	Chandler.		Chandler Motor Car Co.			1,475.00
9	Chevrolet.		Chevrolet Motor Co.			995.00
10	Dort.		Dort Motor Co.			
11	Dorris.					
12	Elgin.		Elgin Motor Corporation.			1,095.00
13	Ford chassis.		Ford Motor Car Co.			
14	Ford roadster.	Roadster.	do.			459.38
15	Ford sedan.		do.			
16	Ford touring.	5 passengers.	do.			483.76
17	Franklin.	Touring.	Franklin Motor Car Co.			2,120.00
18	Franklin sedan.	Sedan.	do.			2,665.75
19	Gilde.					
20	Grant.		Grant Motor Car Corporation.			1,095.00
21						
22	General vehicle:					
23	Haynes.		Haynes Auto Co.			1,850.00
24	Hudson sedan.	Sedan.	Hudson Motor Car Co.			2,245.00
25	Hudson (7 passenger).	Touring.	do.			1,610.00
26	Hudson (bus).	Bus.	do.			3,165.68
27	Hudson 11-mousine.		do.			3,478.00
28	Hupmobile.	Touring.	Hupp Motor Car Corporation.			1,420.00
29	Interstate.		Interstate Motor Co.			1,000.00
30	Jeffrey.		Jeffrey Motor Co.			1,000.00
31	Jordan.		Jordan Motor Co.			2,000.00
32	King.		King Motor Co.			2,000.00
33	Kissel Kar.	Touring.	Kissel Motor Car Co.			1,200.00
34	Kline.		Kline Car Corporation.			1,500.00
35	Lexington.		Lexington Motor Co.			1,500.00
36	Liberty (6 cycle).		Liberty Motor Car Co.			1,385.00
37	Locomobile.	Limousine.	Locomobile Co. of America.			8,840.28

Chart showing cost price of nonstandard motor vehicles in the Army. (To be used by survey officers in the valuation of unserviceable equipment)—Continued.

	Name of vehicle.	Capacity.	Manufacturer's name.	Cost of chassis.	Cost of body, sills, mounting, etc.	Total cost.
	General vehicle—Continued.					
38	Lozier.....		Lozier Motor Car Co.....			
39	McFarland.....		McFarland Motors Co.....			\$3,900.00
40	Marmon.....	Touring.....	Nordyke Marmon.....			3,950.00
41	Maxwell.....	do.....	Maxwell Motor Co.....			835.00
42	Mitchell.....		Mitchell Motors Co.....			1,300.00
43	Monroe.....					
44	Moon.....		Moon Motor Car Co.....			1,285.00
45	Moline-Knight.....		Root-Van Devoort Eng. Co.....			1,750.00
46	Napier.....					
47	Nash.....		Nash Motors Co.....			1,200.00
48	National.....	Touring.....	National Motor Car & Vehicle Corporation.....			1,618.75
49	Oakland.....		Oakland Motor Co.....			1,050.00
50	Oldsmobile.....	Touring.....	Olds Motor Works.....			1,700.00
51	Overland.....	do.....	Will's-Overland Co.....			930.00
52	Overland Roadster.....		do.....			915.70
53	Owen Magnetic.....		Baruch & Lang.....			
54	Packard.....	Touring.....	Packard Motor Car Co.....			2,500.00
55	Paire.....		Pairetrot Motor Co.....			1,370.00
56	Peerless.....		Peerless Motor Car Co.....			2,200.00
57	Pierce-Arrow.....		Pierce-Arrow Motor Car Co.....			4,500.00
58	Pline.....					
59	Premier.....		Premier Motor Corporation.....			2,000.00
60	Pullman.....		Pullman Car Co.....			
61	R. C. H.....					
62	Reo.....	Touring.....	Reo Motor Car Co.....			1,000.00
63	Regal.....		Regal Motor Co.....			
64	Rensault.....					
65	Saxon.....	Touring.....	Saxon Motor Car Co.....			1,535.00
66	Scripps-Booth.....		Scripps-Booth Corporation.....			1,195.00
67	Simplex.....		Simplex Motor Car Co.....			
68	Standard.....		Standard Steel Car Co.....			2,000.00
69	Stearns.....		Stearns Co., F. B.....			1,400.00
70	Studebaker.....	Touring.....	Studebaker Corporation.....			1,050.00
71	Stutz.....		Stutz Motor Car Co.....			
72	Valle.....	Touring.....	Valle Motor Corporation.....			1,165.00
73	White.....		White Co.....			4,000.00
74	Willys-Knight.....		Willys-Overland Co.....			1,400.00
75	Winton.....		Winton Co.....			2,000.00
76	Ambulances:					
77	Ford.....		Ford Motor Co.....			750.00
78	G. M. C.....		General Motor Car Co.....	\$1,250.00	\$471.91	1,721.91
79	Trucks, 1-ton:					
80	Ford, light delivery.....	1-ton.....	Ford Motor Co.....			454.53
81	Kentucky Wagon Manufacturing Co. (Old Hickory).....	do.....	Kentucky Wagon Co.....			705.00
82	Trucks, 1-ton:					
83	Federal.....	Chassis, 1-ton.....		1,437.50		1,437.50
84	Ford.....	1-ton.....	Ford Motor Co.....			562.47
85	Hudford.....	do.....				895.00
86	Packard.....	do.....	Packard Motor Car Co.....			2,308.50
87	Reo.....	do.....	Reo Motor Car Co.....			946.00
88	do.....	Chassis, 1-ton.....	do.....	900.00		900.00
89	Smith-Form-a-Truck.....	1 ton.....	Smith-Form-a-Truck Co.....			627.46
90	Studebaker.....	do.....	Studebaker Corporation.....			1,035.00
91	White.....	do.....	White Co.....	2,280.00	\$1,001.....	3,281.00

Chart showing cost price of nonstandard motor vehicles in the Army. (To be used by surveying officers in the valuation of unserviceable equipment)

[Chart No. 206-A, sheet 2. Compiled by H.H. Checked by AGW and NEB. Ok'd by C.G.Y. Revised Oct. 1, 1919.]

Line No.	Name of vehicle.	Capacity.	Manufacturer's name.	Cost of chassis.	Cost of body, sills, mounting, etc.	Total cost.
92	Trucks, 1½-2 tons:					
93	Atterbury.....	1½ tons.....	Atterbury Motor Truck Co.			\$2,171.00
94	Autocar.....		Auto Car Co.			1,975.00
95	Brockway.....	1½ tons.....	Brockway Truck Co.			2,171.00
96	Denby.....	do.	Denby Motor Co.	\$2,193.50	Included in chassis, \$101.07.	2,294.57
97	Garford.....		Garford Truck Co.	2,329.00		2,706.70
98	Gram-Bernstein.	Chassis, 1½ tons.	Gram-Bernstein Motor Truck Co.			3,045.00
99	International Harvester Truck.		International Harvester Co.	1,803.00 1,768.00	\$273.20 "A" Extra body \$233.30	2,076.20 2,001.30
100	Kelly-Springfield.		Kelly-Springfield Motor Co.	2,262.50	Included in chassis, \$103.14.	2,365.64
101	Light aviation			2,331.16	\$290.76	2,621.92
102	Mack.....		International Motor Corporation.			2,846.00
103	Mack.....		do.			2,898.67
104	Master.....		Master Truck Co.			1,472.50
105	Moreland.....		Moreland Truck Co.	2,641.00	\$261.78	2,902.78
106	Nash Quad.....		Nash Motor Co.	2,938.05	\$238.14	3,176.19
107	Packard.....		Packard Motor Car Co.	2,314.25	\$662.16	2,976.41
108	Pierce-Arrow.....		Pierce-Arrow Motor Car Co.	3,000.00	\$662.16	3,662.16
109	Republic.....		Republic Motor Truck Co.			1,935.00
110	Selden.....		Selden Motor Truck Co.			2,632.00
111	Signal.....		Signal Motor Truck Co.			2,175.00
112	Standard.....		Standard Motor Truck Co.			2,165.00
113	United.....		United Motor Corporation.			2,175.00
114	Velle.....		Velle Motor Corporation			2,421.50
115	Wichita.....		Wichita Truck Co.			2,675.00
116	Wilson.....		J. C. Wilson Co.			2,330.38
117	Trucks, 2½-ton:					
118	Pierce-Arrow.....		Pierce-Arrow Motor Car Co.			3,965.00
119	Trucks, 3-ton:					
120	Atterbury.....		Atterbury Motor Truck Co.			3,150.00
121	Federal.....		Federal Motor Truck Co.	2,680.00		3,350.00
122	Garford.....		Garford Truck Co.			3,932.00
123	Garford.....	Chassis	do.	3,762.00		3,762.00
124	Hurlburt.....	do.	Hurlburt Motor Truck Co.	3,450.00		3,450.00
125	Hurlburt.....	Truck	do.			3,772.78
126	Master.....		Master Truck Co.			2,250.00
127	Packard.....		Packard Motor Car Co.	3,157.00	\$872.84	3,959.84
128	Peerless.....		Peerless Motor Co.	3,093.75		4,150.00
129	Standard.....	Chassis	Standard Motor Truck Co.			3,975.00
130	United.....		United Motor Corporation.			3,000.00
131	Trucks, 3½-ton:					
132	Federal.....			2,884.00	Inc. in chassis, \$122.02.	3,006.02
133	Gram-Bernstein.	3½-ton.....	Gram-Bernstein Motor Truck Co.	2,940.00	Inc. in chassis, \$129.70.	3,069.70
134	Kelly-Springfield.		Kelly-Springfield Motor Co.	2,262.50	Inc. in chassis, \$109.38.	2,371.88
135	Mack.....		International Motor Corporation.	340.40	\$38.40	4,190.40
136	Pierce-Arrow.....	Chassis, 3½-ton.	Pierce-Arrow Motor Car Co.	4,339.00		4,339.00
137	Republic.....		Republic Motor Truck Co.	2,975.00	Inc. in chassis, \$130.75.	3,105.75
138	Selden.....		Selden Motor Truck Co.	3,000.00	Inc. in chassis, \$131.50.	3,131.50
139	Standard.....		Standard Motor Truck Co.	3,000.00	Inc. in chassis, \$131.50.	3,131.50
140	Velle.....		Velle Motor Corporation.	3,125.00	Inc. in chassis, \$135.25.	3,260.25

Chart showing cost price of nonstandard motor vehicles in the Army. (To be used by surveying officers in the valuation of unserviceable equipment)—Continued.

Line No.	Name of vehicle.	Capacity.	Manufacturer's name.	Cost of chassis.	Cost of body, sills, mounting, etc.	Total cost.
141	Trucks, 4-ton:					
142	Moreland.....	4-ton.....	Moreland Truck Co.....	\$3,416.00	\$308.78.....	\$3,724.78
143	Riker.....	do.....	The Locomobile Co. of America.	4,088.86	498.26.....	4,587.12
144	Trucks, 5-ton:					
145	Denby.....		Denby Motor Co.....			4,750.00
146	Doane.....		Doane Motor Truck Co.....			4,064.00
147	Federal.....		Federal Truck Co.....	3,555.00	\$509.60.....	4,064.60
148	Garford.....		Garford Truck Co.....			4,936.00
149	Hurlburt.....	D u m p body.	Hurlburt Motor Truck Co.	3,555.00	\$504.60.....	4,059.60
150	Packard.....		Packard Motor Car Co.			4,485.00
151	Pierce-Arrow.....		Pierce-Arrow Motor Car Co.	4,400.00	Unknown, \$528.40	4,928.40
152	Packard.....		Packard Motor Car Co.			4,071.00
153	Republic.....	D u m p body.	Republic Motor Truck Co.			5,500.00
154	Standard.....	5-ton.....	Standard Motor Truck Co.			4,250.00
155	Vellie.....		Vellie Motor Corporation.			3,305.00
156	White.....		The White Co.....			4,785.00
157	Trucks, 6-ton:					
158	Doane.....		Doane Motor Truck Co.			5,257.00
159	Garford.....	Dump.....	Garford Truck Co.....			5,394.00
160	Packard.....		Packard Motor Car Co.....			5,191.50
161	Do.....	Chassis.....	do.....			4,466.00
162	Trucks, 7½-ton:					
163	Mack.....	D u m p body.	International Motor Corporation.			5,890.00
164	Motor cycles:					
165	Excelsior.....	Side cars, \$72.	Excelsior Motorcycle Co.		\$338.....	410.00
166	Henderson.....	do.....	Henderson Motorcycle Co.		\$333.....	405.00
167	Cleveland.....		Cleveland Motorcycle Co.		\$184.59.....	184.59
168	Indian.....	Side cars, \$91.50.	Hendee Manufacturing Co.		\$329.30.....	420.30
170	Bicycles:					
171	Iver-Johnson Co.		Iver-Johnson Manufacturing Co.			30.70
172	Savage Arms Co.		Savage Arms Co.			26.50
173	Davis.....		Davis Sewing Machine Co.			36.00
174	Great Western.....		Great Western Manufacturing Co.			36.00
175	Westfield.....		Westfield Manufacturing Co.			36.00

NOTE.—The above data has been compiled from statistics furnished from M. & V. Division, P. & S., combined with the information in this office, and is the best available data to date. M. T. C. Chart No. 209, issued on Aug. 19, 1919, is superseded by this chart.

Mr. FIELDS. You have a greater number of trucks on hand than are needed for an army of 175,000 men, have you not?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. The other articles that are included in this material are bicycles and motor cycles?

Gen. DRAKE. Yes, sir; and trailers.

The CHAIRMAN. How many motor cycles have you out of that total of 86,373?

Gen. DRAKE. The total number is 17,464.

The CHAIRMAN. Some of those will be declared surplus later on.

Gen. DRAKE. Yes, sir.

The CHAIRMAN. What is the value of a motor cycle?

Gen. DRAKE. The average cost would have been about \$300.

The CHAIRMAN. Do you buy them from more than one manufacturer?

Gen. DRAKE. We bought during the war from three different manufacturers, the Harley-Davidson Co. the Hendee Manufacturing Co., and the Cleveland Motorcycle Co.

The CHAIRMAN. Did the prices vary?

Gen. DRAKE. Yes, sir; the Harley-Davidson Co.'s prices were the highest, that was the most expensive motor cycle, but it was also the most serviceable.

The CHAIRMAN. You say you have trailers?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Are those the side machines?

Gen. DRAKE. That is a four-wheeled trailer which is drawn behind a motor vehicle.

The CHAIRMAN. What do you call those side vehicles attached to the motor cycles?

Gen. DRAKE. They are called side cars.

The CHAIRMAN. Have you a large number of those on hand?

Gen. DRAKE. They are included in the above figures; I did not differentiate in my tabulation between motor cycles equipped with side cars and those that are solos.

The CHAIRMAN. How many trailers have you?

Gen. DRAKE. We have 8,716.

The CHAIRMAN. I suppose many of them will be made surplus.

Gen. DRAKE. There will be some surplus, I believe.

The CHAIRMAN. How much of this money you are asking for will be used for repair and maintenance?

Gen. DRAKE. I can give you the figures for an army of 300,000 men. The figures for an army of other enlisted strengths would be pro rata.

The CHAIRMAN. Will you kindly pro rate it in the hearing so that we will know how much you will use in case the Army should have 175,000 enlisted men?

Gen. DRAKE. I have that right here. This is the status of the appropriation. This estimate is calculated on a percentage basis of the allowance of an army of 300,000 men with 5 per cent added for the difference in overhead allowed on small production, except that hire of motor cars and hire of trucks, which amounts were not changed. For an army of 175,000 men, the estimate is as follows: Shop maintenance, \$1,515,771.90; repair of motor cars, \$2,640,213.13; for repair of trucks and trailers, \$13,083,249.70; for repair of motor cycles, \$1,958,792.46; for repair of bicycles, \$39,386.95; for hire of motor cars, \$10,000; for hire of motor trucks, \$10,000, making a total of \$19,257,414.14.

Mr. GREENE. That presumes, General, the full equipment of all motor transportation?

Gen. DRAKE. Yes, sir.

Mr. GREENE. For 175,000 men?

Gen. DRAKE. Yes, sir.

Mr. GREENE. On what tactical basis are you organizing these 175,000 men, that is to say, under the nine division scheme?

Gen. DRAKE. That policy has not been announced by the War Department. We worked it out on a basis announced heretofore of 300,000 men and reduced the figures to correspond, on a percentage basis.

Mr. GREENE. If you have brigade and division and corps headquarters and their overhead of vehicles with the same number of people you have in an army of 175,000 men skeletonized in one form of organization it will lead to a good many overheads, and they may be combined in lesser tactical organizations with less vehicles?

Gen. DRAKE. Yes, sir; and we have allowed a small percentage for overhead in the case of a smaller army.

Our estimate under this head of maintenance and operation of motor vehicles, based on an army of 200,000 men is as follows: Shop maintenance, \$1,715,152; repair of motor cars, \$2,987,488.92; repair of trucks and trailers, \$14,804,131.91; repair of motor cycles, \$2,216,438.78; repair of bicycles, \$44,567.50; hire of motor cars, \$10,000; hire of motor trucks, \$10,000, making a total of \$21,787,779.11.

Our estimate for the same purpose based on an army of 225,000 men is as follows: Shop maintenance, \$1,914,766.48; repair of motor cars, \$3,335,181.98; repair of trucks and trailers, \$16,527,082.02; repair of motor cycles, \$2,474,394.69; repair of bicycles, \$49,754.56; hire of motor cars, \$10,000; hire of motor trucks, \$10,000, making a total of \$24,321,179.73.

Our estimate for the same purpose based on an army of 300,000 men is as follows: Shop maintenance, \$2,393,458.10; repair of motor cars, \$4,168,977.47; repair of trucks and trailers, \$20,658,852.53; repair of motor cycles, \$3,092,993.36; repair of bicycles, \$62,193.20; hire of motor cars, \$10,000; hire of motor trucks, \$10,000, making a total of \$30,396,474.66.

The CHAIRMAN. These figures for maintenance and repair which you have given, I presume, are the results of observations made during the war period and the period since the war?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. After a careful investigation of what it costs to keep a vehicle in repair?

Gen. DRAKE. Yes, sir. The full details on which the estimate is based are given on these sheets, which I will hand to the reporter.

(The matter referred to is as follows:)

Estimates of items pertaining to maintenance division for the fiscal year 1921.

	Quantity.	Value.
Shop maintenance:		
Kerosene consumption, at 10 cents per gallon—		
Eight shops using 8 gallons per day for 313 days.....	20,022 galls.	\$3,567.20
Fifty service parks using 1 gallon per day for 313 days.....	15,650 galls.	
Charcoal consumption, at 2 cents per pound, eight shops, average 20 pounds per week.....	8,320 lbs.	166.40
Coal consumption, at \$12 per ton locomotive, locomotive crane, power-plant consumption, etc.....	25,000 tons.	300,000.00
Wood consumption, at \$17 per cord (1 cord of wood to every 125 tons of coal).....	200 cords.	3,400.00
Fuel oil.....	20,000 bbls.	80,000.00
Miscellaneous shop tools.....		100,000.00
Shop supplies, miscellaneous, department supplies, acetylene, oxygen, steel-bar stock, babbitt, vulcanizing material, etc.....		687,964.50
Machine-tool equipment, including new machinery and replacement parts, including hand tools.....		420,000.00
Class A supplies, lumber, nails, cleaning compound, brooms, waste, etc.....		750,000.00
Gasoline consumption, at 25 cents per gallon—		
Shop consumption, 20 gallons per day per shop, 6 shops, 300 days per year.....	57,440 galls.	9,360.00
Machine-shop trucks, 10 gallons per day for 50 trucks, 312 days per year.....	156,000 galls.	39,000.00
Total.....		2,393,458.10

Estimates of items pertaining to maintenance division for the fiscal year 1921—Continued.

	Quantity.	Value.
Repair of motor cars:		
Automobiles, light, open and closed, 2,861—		
Tire consumption, 6 tires per vehicle per year.....tires..	17,166	\$540,729.00
Tube consumption, 12 tubes per vehicle per year.....tubes..	34,332	74,500.44
Spare-parts consumption, allowance per vehicle per year, \$200.....		572,200.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....galls..	8,583	6,866.40
Paint consumption, at \$2.05 per gallon, 2 coats per vehicle twice a year.....galls..	5,722	11,730.10
Equipment, tool-kit replacements, and depreciation prorated per vehicle per year, \$5.....		14,305.00
Gasoline consumption, at 25 cents per gallon, 2,861 vehicles, 7.5 gallons each per day for 300 days.....galls..	6,437,250	1,609,312.50
Oil consumption, at 45 cents per gallon, 2,861 vehicles, 0.5625 gallon each per day for 300 days.....galls..	482,793.75	217,257.19
Grease consumption, 2,861 vehicles, 0.6 pound per day for 300 days; 20 per cent cup grease, 102,996 pounds, at 7½ cents per pound; 80 per cent 600 W, 411,984 pounds, at 20 cents per pound.....pounds..	514,980	7,724.20 82,396.80
Kerosene consumption, at 10 cents per gallon, 2,861 vehicles, 0.2475 gallon per day for 300 days per year.....galls..	212,429	21,242.90
Class A supplies used in the repair and upkeep of vehicles, and vehicle equipment, prorated per vehicle per year, \$5.....		14,305.00
Total.....		3,172,569.53
Automobiles, heavy, open and closed, 759—		
Tire consumption, 6 tires per vehicle per year.....tires..	4,554	204,930.00
Tube consumption, 10 tubes per vehicle per year.....tubes..	7,590	27,096.30
Spare-parts consumption, allowance per vehicle per year, \$300.....		237,700.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....galls..	2,277	1,821.60
Paint consumption, at \$2.05 per gallon, 2 gallons per vehicle per year.....galls..	1,518	3,211.90
Equipment, tool-kit replacement, and depreciation prorated per vehicle per year, \$5.....		3,795.00
Gasoline consumption, at 25 cents per gallon, 759 vehicles, 7.5 gallons per day for 300 days per year.....galls..	1,707,750	426,937.50
Oil consumption, at 45 cents per gallon, 759 vehicles, 0.5625 gallon per day for 300 days per year.....galls..	128,081.25	57,636.56
Grease consumption, 759 vehicles, 0.6 pound per day for 300 days per year, 20 per cent cup grease, 27,324 pounds, at 7½ cents per pound; 80 per cent 600 W, 109,296 pounds, at 20 cents per pound.....lbs..	113,620	2,049.30 21,859.20
Kerosene consumption, at 10 cents per gallon, 759 vehicles, 0.2475 gallon per day for 300 days per year.....galls..	55,755.75	5,575.58
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		3,795.00
Total.....		996,407.94
Repair of trucks and trailers:		
Trucks, ½-ton, with ambulance, cargo, tank, and miscellaneous body mountings, 4,010—		
Tire consumption, 4 tires per vehicle per year.....tires..	16,040	721,800.00
Tube consumption, 8 tubes per vehicle per year.....tubes..		128,320.00
Spare parts consumption, allowance per vehicle per year, \$245.....		982,500.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....gallons..	12,030	9,624.00
Paint consumption, at \$2.05 per gallon, 2 coats per vehicle twice a year.....gallons..	12,030	24,661.50
Equipment: Tool kit replacement and depreciation prorated per vehicle per year, \$5.....		20,050.00
Gasoline consumption, at 25 cents per gallon, 4,010 vehicles, 7.5 gallons per day for 300 days.....gallons..	9,022,500	2,255,625.00
Oil consumption, at 45 cents per gallon, 4,010 vehicles, 0.5625 gallons per day for 300 days per year.....gallons..	676,687.5	364,509.38
Grease consumption, 4,010 vehicles, 0.6 pounds per day for 300 days, 20 per cent cup grease, 144,360 pounds, at 7½ cents per pound; 80 per cent 600 W grease, 577,440 pounds, at 20 cents per pound.....lbs..	721,800	10,827.00 115,488.00
Kerosene consumption, at 10 cents per gallon, 4,010 vehicles, 0.2475 gallons per day for 300 days per year.....gallons..	297,742.5	29,774.25
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment, prorated per vehicle per year, \$5.....		20,050.00
Total.....		4,683,229.13
Trucks, 1-ton, with reconnaissance machine gun and Stagg observation body mountings.....		
Tire consumption, 4 tires per vehicle per year.....tires..	1,087	195,660.00
Tube consumption, 8 tubes per vehicle per year.....tubes..	8,696	34,784.00
Spare parts consumption, allowance per vehicle per year, \$245.....		266,315.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....galls..	3,261	2,628.80

Estimates of items pertaining to maintenance division for the fiscal year 1921—Continued.

	Quantity.	Value.
Repair of trucks and trailers—Continued.		
Trucks, 1-ton—Continued.		
Paint consumption, at \$2.05 per gallon, 2 coats per vehicle twice a year.....	3,261	\$6,685.05
Equipment, tool kit replacement and depreciation prorated per vehicle per year, \$5.....		5,435.00
Gasoline consumption, at 25 cents per gallon, 1,087 vehicles, 7.5 gallons per day for 300 days per year.....	2,445,750	611,437.50
Oil consumption, at 45 cents per gallon, 1,087 vehicles, 0.5625 gallons per day for 300 days per year.....	183,431.25	82,544.06
Grease consumption, 1,087 vehicles, 0.6 pounds per day for 300 days per year, 20 per cent cup grease, 69,132 pounds, at 7½ cents per pound; 80 per cent 600 W, 276,528 pounds, at 20 cents per pound.....	345,680.00	{ 5,184.90 55,305.60
Kerosene consumption, at 10 cents per gallon, 1,087 vehicles, 0.2475 gallons per day for 300 days per year.....	80,709.75	8,070.94
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment, prorated per vehicle per year, \$5.....		5,435.00
Total.....		1,279,485.89
Trucks, 1½-ton, with cargo and special body mountings.....		
Tire consumption, 4 tires per vehicle per year.....	3,120	
Spare parts consumption, allowance per vehicle per year, \$300.....	18,720	322,000.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....		936,000.00
Paint consumption, at \$2.05 per gallon, 2 coats twice a year.....	9,360	7,498.00
Equipment, tool-kit replacements and depreciation prorated per vehicle per year, \$5.....	9,360	19,188.00
Gasoline consumption, at 25 cents per gallon, 3,120 vehicles, 7.5 gallons per day for 300 days.....		15,600.00
Oil consumption, at 45 cents per gallon, 3,120 vehicles, 0.5625 gallons per day for 300 days.....	7,020,000	1,755,000.00
Grease consumption, at 7½ cents per pound, 600-W, at 20 cents per pound, 3,120 vehicles, 0.61 pound per day for 300 days, 20 per cent cup grease, 112,320, at 7½ cents per pound; 80 per cent 600-W, 449,280, at 20 cents per pound.....	1,755	78,975.00
Kerosene consumption, at 10 cents per gallon, 3,120 vehicles, 0.2475 gallon per day for 300 days.....	561,600	{ 8,424.00 33,686.00
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....	231,680	23,166.00
Total.....		3,218,137.00
Trucks, 3 to 5 ton, with cargo, Artillery supply equipment repair, machine shop, tank, and special body mountings, 5,561—		
Tire consumption, 4 tires per vehicle per year.....	22,244	667,320.00
Spare parts consumption, allowance per vehicle per year, \$500.....		2,780,500.00
Alcohol consumption, at 80 cents per gallon, 3 gallons per vehicle per year.....	16,683	13,346.40
Paint consumption, at \$2.05 per gallon, 2 coats per vehicle twice a year.....	16,683	34,107.90
Equipment tool kit replacement and depreciation prorated per vehicle per year, \$5.....		27,805.00
Gasoline consumption, at 25 cents per gallon, 5,561 vehicles, 7.5 gallons per day for 300 days.....	12,512,250	3,128,057.50
Oil consumption, at 45 cents per gallon, 5,561 vehicles, 0.5635 gallon per day for 300 days.....	938,418.75	422,288.44
Grease consumption, 20 per cent cup grease, 200,196, at 7½ cents per pound; 80 per cent 600 W, 800,784, at 20 cents per pound.....		{ 15,014.70 60,058.80
Kerosene consumption, at 10 cents per gallon, 5,561 vehicles, 0.2475 gallon per day for 300 days.....	412,904.25	41,290.42
Class "A" supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		27,805.00
Total.....		7,217,594.11
Trucks, F. W. D., with ammunition cargo, balloon winch body mountings, 2711—		
Tire consumption: 6 tires per vehicle per year.....	16,286	341,586.00
Spare parts consumption: Allowance per vehicle per year, \$400.....		1,084,400.00
Alcohol consumption, at 80 cents per gallon: 3 gallons per vehicle per year, total number of gallons.....	8,133	6,506.00
Paint consumption, at \$2.05 per gallon: 2 coats twice a year.....	8,133	11,672.55
Equipment: Tool kit replacements and depreciation prorated per vehicle per year, \$5.....		13,555.00
Gasoline consumption, at 25 cents per gallon: 7.5 gallons per day for 300 days.....	6,099,750	1,524,937.00
Oil consumption, at 45 cents per gallon, 0.5625 gallon per day for 300 days.....	358,159	161,171.55

Estimates of items pertaining to maintenance division for the fiscal year 1921—Continued.

	Quantity.	Value.
Repair of trucks and trailers—Continued.		
Trucks, F. W. D. with ammunition cargo—Continued.		
Grease consumption, 0.6 pound per day for 300 days (20 per cent cup grease, 97, 586 pounds, at 7½ cents per pound; 80 per cent 600 W., 390,384 pounds, at 20 cents per pound).....	487,980	\$7,309.70 78,056.50
Kerosene consumption, at 10 cents per gallon, 0.2475 gallon per day for 300 days per year.....	198,581	19,856.10
Class A supplies used in the repair and upkeep kits of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		12,555.00
Total.....		3,262,607.40
Trucks, searchlight sets, and power special equipment 39—		
Tire consumption, 4 tires per vehicle per year; total tires, 156.....		4,183.00
Spare parts consumption, allowance per vehicle per year, \$300.....		11,700.00
Alcohol consumption, 3 gallons per vehicle per year; total, 117 gallons, at 80 cents per gallon.....		93.60
Paint consumption, 2 coats twice a year; total, 117 gallons, at \$2.05 per gallon.....		239.85
Equipment—tool-kit replacement and depreciation—prorated per vehicle per year, \$5.....		195.00
Gasoline consumption, 7.5 gallons per day for 300 days; total, 87,750 gallons, at 25 cents per gallon.....		21,937.50
Oil consumption, 0.5625 gallon per day for 300 days; total, 6,572 gallons, at 45 cents per gallon.....		2,957.40
Grease consumption, 0.6 pound (20 per cent cup, 1,404 pounds, at 7½ cents per pound; 80 per cent 600 W., 5,616 pounds, at 20 cents per pound).....		106.30 1,124.00
Kerosene consumption, 0.2475 gallon per day for 300 days; total, 2,896 gallons, at 10 cents per gallon.....		289.60
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		195.00
Total.....		43,518.25
Trailers, 3-ton, 2-wheel to 10-ton, 4-wheel 5687—		
Tire consumption, 1 new set per vehicle per year; total, 15,320 tires.....		612,000.00
Spare parts consumption, allowance per vehicle per year, \$50.....		279,360.00
Paint consumption, two coats twice a year; total, 11,176 gallons, at \$2.05 per gallon.....		22,910.80
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		27,935.00
Grease consumption, 0.12 pound per day for 300 days; total, 201,132 pounds, at 7½ cents per pound.....		15,084.60
Total.....		967,280.70
Motorcycles and side cars, 7,741:		
Tire consumption, 9 tires per vehicle per year.....	69,669	585,219.00
Tube consumption, 12 tubes per vehicle per year.....	92,892	123,446.36
Spare parts consumption, allowance per vehicle per year, \$125.....		967,725.00
Paint consumption, at \$2.05 per gallon; two coats twice a year.....	8,841	15,899.05
Equipment, tool kit replacement and depreciation, prorated per vehicle per year, \$3.....		23,223.00
Gasoline consumption, at 25 cents per gallon, 7,741 vehicles, 2 gallons per day for 300 days per year.....	4,644,600	1,161,150.00
Oil consumption, at 45 cents per gallon, 7,741 vehicles, 0.15 gallons per day for 300 days per year.....	348,345	156,755.25
Grease consumption, cup, at 7½ cents per pound, 7,741 vehicles, 0.16 pounds per day for 300 days per year, 20 per cent of total.....	74,314	5,573.52
Kerosene consumption, at 10 cents per gallon, 7,741 vehicles, 0.066 gallons per day for 300 days per year.....	153,272	15,327.18
Class A supplies used in the repair and upkeep of vehicles and vehicle equipment prorated per vehicle per year, \$5.....		38,705.00
Total.....		3,092,993.36
Repair of bicycles:		
Bicycles, 3,404—		
Tire consumption, 4 tires per vehicle per year.....	13,616	28,185.12
Tube consumption, 6 tubes per vehicle per year.....	20,424	13,584.08
Spare parts consumption, allowance per vehicle, per year, \$6.....		20,424.00
Total.....		62,193.20
Hire of motor vehicles:		
Motor cars (estimated).....		10,000.00
Motor trucks (estimated).....		10,000.00
Total.....		20,000.00
Grand total.....		30,396,474.66

The CHAIRMAN. Do you buy any of the oil or gasoline as a part of the maintenance of these vehicles, or is that furnished by the Quartermaster General?

Gen. DRAKE. Heretofore it has been furnished by the Quartermaster General under his appropriation for regular supplies. This estimate is prepared on a different basis, and we were instructed to provide our own oil and gasoline.

The CHAIRMAN. So that those items are included in these totals you have given us.

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Do you furnish the tractors?

Gen. DRAKE. They are furnished by the Ordnance Department.

The CHAIRMAN. You would not know anything about these Mollitor tractors which have lately been purchased?

Gen. DRAKE. Yes, sir. They are not tractors in the full sense of the word. They are trucks which are capable of giving tractor effort. They are just a 4-wheel driven truck.

The CHAIRMAN. We have purchased those which we have at present since the war, have we not?

Gen. DRAKE. The purchase of 75 of them has been authorized and they are in process of manufacture at the present time.

The CHAIRMAN. We had none at all before?

Gen. DRAKE. Except five which were purchased for experimental purposes.

The CHAIRMAN. Is it the purpose to use them rather than the other machines?

Gen. DRAKE. They are to be used in place of the F. W. D. truck and the Nash truck, which were heretofore authorized for the Artillery. Neither one of these trucks could operate efficiently, and this truck was designed with the object of replacing the others for the motorization of the Field Artillery.

The CHAIRMAN. You are expecting to supply them with vehicles for the motorization of the Artillery?

Gen. DRAKE. Except tractors known as such. That is, we have two classes of tractors, wheel tractors and caterpillar tractors, and it is the duty of the Ordnance Department to furnish those.

The CHAIRMAN. Then I understand you are not furnishing those Mollitor vehicles?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. You are furnishing them?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Is there to be a duplication?

Gen. DRAKE. No, sir; these are Mollitor trucks.

The CHAIRMAN. Is this amount you are asking for intended to include money for the purchase of these Mollitor trucks?

Gen. DRAKE. No, sir; the money has been appropriated for their purchase. It was allotted to the Motor Transport Corps by the Ordnance Department.

The CHAIRMAN. How much was that amount?

Gen. DRAKE. They allotted \$1,000,000 to the Motor Transport Corps. The actual cost of the tractors was around \$650,000.

Mr. GREENE. To get back to the operation of these motor vehicles in a peace time Army, that would bring up the figures of repairs to the figures you have given? How do you differentiate between the

activities that would be necessary for that transportation in the field, say, in operations for maneuvers; that is, differentiate in the cost of that upkeep and the ordinary peace-time requirements for maneuvers and drills, which are only incidental, in which wagon transportation is not running night and day, and which is only incidental to the maintenance of a garrison, or something of that kind.

Gen. DRAKE. The allowance was worked out on a presumed maximum mileage in each case.

Mr. GREENE. Is mileage the determining factor?

Gen. DRAKE. That is used as the determining factor for the expenditure of gasoline and oils, and the amount for spare parts and equipment is usually based upon that, and the experience tables we have developed.

Mr. GREENE. Of course, you would not expect to trust entirely to the mileage basis because cross-country operations, even in maneuvers, would break up more than the equivalent of the mileage?

Gen. DRAKE. Cross-country work would be much more detrimental to the service of the trucks.

Mr. GREENE. I wondered whether you had something like a reliable standard on which you figure the distinction between what you expect to pay for upkeep when you are actively using the trucks in something like war-time operations, or when it is just the routine garrison work and only incidental field operations in the way of drill.

Gen. DRAKE. The cost of operation and maintenance will, of course, be dependent upon the time of operation and the character of the roads. If vehicles are kept in reserve, the cost of operation will of course, be nil.

Mr. GREENE. I was about to ask whether it would not be true in peace time, with the enormous number of vehicles you have, that only in the case of mobilization for field maneuvers could there be use for all of them?

Gen. DRAKE. If a division was fully equipped they would not have use at any one time during their stay in a camp or cantonment for more than one-fifth of their vehicles.

Mr. GREENE. And that is all taken into consideration?

Gen. DRAKE. Yes, sir; and the estimates are reduced accordingly.

The CHAIRMAN. General, do you conduct schools for the repair of the motor-propelled vehicles?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Where are those schools?

Gen. DRAKE. We have one school at Camp Holabird for the commissioned officers and enlisted men. We instruct the officers not only of the Motor Transport Corps, and not only the men of the Motor Transport Corps but any that are detailed for this duty by the War Department. Then at Camp Jessup, Ga., Camp Normoyle, and Camp Boyd, Tex., we also instruct officers and enlisted men.

The CHAIRMAN. So you really have four schools for the instruction of officers and enlisted men?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Camp Holabird, Camp Normoyle, and Camp Jessup would be three, and Camp Boyd would make the fourth?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. How many students are there at these schools?

Col. STAYER. I can not say exactly how many there are. But there are about a thousand undergoing instruction at Camp Holabird, about 600 at Camp Jessup, 393 at Camp Normoyle, and 439 at Camp Boyd. And all of the men detailed to these camps are either working on productive work, that is, in the manual trades, or driving a truck, or undergoing instruction. We have courses of instruction in everything connected with the automotive industry, from warehousing to spare parts, and their distribution, and the actual mechanical work, working on lathes, grinders, and so forth.

Mr. CALDWELL. Do those men learn all the various things connected with that industry, or do you specialize with them?

Col. STAYER. In regard to the men who come in for one year, we have a board that examines them, and we find out what their knack is, what their tendency is toward, and we give these men special courses and endeavor to turn them out as specialists in the things they like. When a man has been in one of those schools for three years he will be a first-class automotive mechanic. We have regular courses laid down, which are approved by the manufacturers of automobiles and motor cycles.

Mr. CALDWELL. And the trade-unions, when a man graduates from one of your schools as a thorough mechanic will take him into a union, and he does not have to serve his apprenticeship somewhere else?

Col. STAYER. I understand that is the case.

Mr. CALDWELL. General, what have you done to protect the motor transport material that was exposed to the weather at Camp Jessup when we were down there last year?

Gen. DRAKE. A large amount of that material is stored at Camp Gordon under sheds.

Col. STAYER. We are using the war prison barracks for storage at Fort McPherson, and we have covered all of those vehicles at Camp Jessup with canvas. Those machines have been slushed and oiled.

Mr. CALDWELL. So far as the slushing and oiling is concerned, while that may be scientifically all right, it looks like it is all wrong.

The CHAIRMAN. I understand you are building storage at Camp Holabird, where a great many motor vehicles were exposed to the elements?

Gen. DRAKE. We had on hand at Camp Holabird some hangar material, and I am using that material and giving the enlisted men a course of training in structural steel work in constructing those buildings.

Mr. CALDWELL. Giving them a course of training in building something that you have to have?

Gen. DRAKE. Yes, sir.

Mr. GREENE. That is the best kind of training.

Mr. CALDWELL. When we were at Camp Jessup there were several hundred, perhaps a thousand motor vehicles, from which the tires had been removed and they had been slushed with oil and set up on standards, and apparently a great effort had been made to protect them. But still they were out in the weather, while just a few miles away there were those big empty barracks at Camp Gordon. Did you take those trucks to Camp Gordon and store them away?

Gen. DRAKE. A large number of them were, and numbers of them were transferred to the Agricultural Department.

Mr. CALDWELL. New material coming in at Camp Jessup is carried several hundred miles over the railroad, is it not?

Gen. DRAKE. Some of it is; yes, sir.

Mr. CALDWELL. Are you asking an appropriation here to pay for the transportation of that material three or four hundred miles across the country?

Gen. DRAKE. No, sir; that is covered in the item for transportation by rail, in Gen. Hines's estimate.

Col. STAYER. If I may state, Mr. Chairman, we do not ship whole vehicles into a shop, unless the vehicles are so badly damaged that they have to go to a shop to be rebuilt entirely, and we pull out the motor or the transmission or a rear axle and put in new material and ship that into the depot and repair it, and then they use that on another car. So the freight rates are not based on the whole vehicle going in. Commercial experience, as well as our experience in France, has shown that that is the most economical way to repair a vehicle.

Mr. CALDWELL. I was very strongly impressed when I was down there with the proposition that Camp Jessup being located as it was, was too far away from any central camp to be an economical proposition, and that it is a place that has to be fed with work from half a dozen different places, and it seemed that it was more of a benefit to the railroad and express companies than it was to the Government. Of course, that is only a matter of opinion, but that is the way it looks to a man who went there to take a look at it.

Gen. DRAKE. The shop was placed at Atlanta because that is a strategical railroad point in the South.

Mr. CALDWELL. That is the way they explained it to us, and that is the trouble, that they seem to think more about the railroads than about the repair of vehicles, and I guess the nearest camp, except Camp Gordon, which will be abandoned in a short while, is several hundred miles away. So everything it gets has to be shipped in there from some other camp a good distance off, and it seemed to us that it was not good economy. Of course, it may figure out on a piece of paper that it is good economy.

Col. STAYER. Camp Benning is right there in Georgia.

Mr. CALDWELL. How many miles is Camp Benning away? It is a couple of hundred miles, is it not? It is 125 miles by road from Camp Gordon. That is the nearest camp you have to that point.

Col. STAYER. It is not good economical practice to tear those shops up in pieces and carry them around the country. If you do that you get into the roadside garage proposition, which is the most expensive thing there is.

Mr. CALDWELL. The permanent camps in the South are going to be Bragg, Knox, and Benning, and under the present scheme you are going to put up a shop in the center of those camps. Why not have three little shops and put one in each place?

Gen. DRAKE. This shop was located during the war.

Mr. CALDWELL. I know, but now is a very good time to sell that shop, it seems to me. You will never get the price for it again that you can get for it to-day.

The CHAIRMAN. At any rate the Secretary of War would be the proper person to give directions for the sale of that property?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. You can not do it without his direction?

Gen. DRAKE. No, sir.

The CHAIRMAN. Without instruction from higher authority?

Gen. DRAKE. No, sir.

The CHAIRMAN. Have you made any recommendations upon the subject to the War Department?

Gen. DRAKE. No, sir; I have not.

The CHAIRMAN. Mr. Greene has just suggested that a good many Members of the House want definite information about matters like this. How many of the vehicles you have on hand were delivered, after the signing of the armistice, under contracts that were then pending? Can you give that information?

Gen. DRAKE. Yes, sir. There were 81,448 vehicles delivered after the armistice was signed.

Mr. GREENE. That were actually in process of construction?

Gen. DRAKE. That were actually in process of construction, or that the contractors refused to settle their contracts for, without completing the construction of them.

Mr. GREENE. The terms of the original contract having been such that they were in a position so to do.

Gen. DRAKE. I believe so. I had nothing to do with the purchase of vehicles or the settlement of the contracts.

Mr. CALDWELL. All those vehicles were purchased through Mr. Crowell, were they not?

Gen. DRAKE. They were purchased through the Purchase and Storage Division.

Mr. CALDWELL. Was not the matter of the purchase of automobiles, when we went into the war, and also the question of construction and design, under the Quartermaster Corps, and in charge particularly of Colonel, afterwards General, and then demoted to Colonel again, Chauncey Baker?

Gen. DRAKE. Yes, sir.

Mr. CALDWELL. Then he was reduced to colonel and sent to some other place?

Gen. DRAKE. Yes, sir.

Mr. CALDWELL. Immediately after that the purchases of motor vehicles were made through Mr. Crowell and General Goethals; is that not right?

Gen. DRAKE. Yes, sir; General Goethals was in charge of that.

Mr. CALDWELL. And at that time there were under test three standard sizes of motor cars, that is, the heavy truck, the 10-ton truck, and then Class A and Class AA.

Gen. DRAKE. Yes, sir.

Mr. CALDWELL. And the heavy truck had been tested and found to be suitable, and Class A was built and ready for test and was held up for many months until he was reduced. When he was reduced it was tested and found to be up to standard, but notwithstanding that Goethals and Crowell purchased these thousands of all kinds of machines all over the country, many thousands of them, and they were put out on the Hackensack meadows and they stayed there throughout the whole war and were never used. Is not that correct?

Gen. DRAKE. Not precisely.

Mr. CALDWELL. Then I wish you would tell the committee exactly what happened.

Gen. DRAKE. The class A and class AA trucks were purchased; they were experimental trucks.

Mr. CALDWELL. Was that before Baker had been reduced, or after?

Gen. DRAKE. Before.

Mr. CALDWELL. I think you are absolutely wrong about that. If you get the dates you will find you are wrong about that, I think. If you find that, I wish you would correct your notes to that effect. If you find you are right, let your answer stand.

Gen. DRAKE. I know I am right about it because I handled the correspondence. Sample class A and the class AA trucks were both constructed and the recommendation for the purchase of these trucks was approved by General Goethals in writing, but he gave General Baker verbal instructions to hold up the purchase. The bids in full for the production of the class A truck were obtained, and the manufacturers were daily calling up the office to find out when the orders would be placed, and General Goethals then directed that they would not be put into manufacture.

Mr. CALDWELL. That is what I have in mind. There was no purchase of the class A and the class AA trucks while Baker was in charge of the automotive transportation?

Gen. DRAKE. No, sir; except the experimental trucks.

Mr. CALDWELL. And while these had all been accepted, Mr. Crowell and Gen. Goethals negotiated the purchase of hundreds and may be thousands of ordinary commercial trucks; is that not true?

Gen. DRAKE. Those purchases were handled by Col. Glover in the—

Mr. CALDWELL (interposing). Under direct orders signed by Mr. Crowell, issued by Gen. Goethals?

Gen. DRAKE. I do not know of any such orders.

Mr. CALDWELL. I have a copy of them in my office. Following the purchase of those vehicles, hundreds of them, and may be thousands were put out on the Hackensack meadows, just outside of New York, where the atmosphere is heavily charged with salt air, and they stayed there throughout the whole war; is that not true?

Gen. DRAKE. They were stored in various places in proximity to the seaports, awaiting transportation overseas. There were some at Harrisons Landing and Port Newark.

Mr. CALDWELL. Uncovered, lying out in the air?

Gen. DRAKE. Yes, sir; there were no covers available for them.

Mr. CALDWELL. And they stayed there throughout the whole war, until after the armistice was signed. You moved some of them after the armistice?

Gen. DRAKE. Yes, sir, a lot of them; but I do not know whether they were the same trucks that remained there during the period of the war or not.

The CHAIRMAN. As a matter of fact, Gen. Goethals was the head of the Purchase and Storage organization in the Army, was he not?

Gen. DRAKE. His designation was Director of Purchase, Storage and Traffic, which was a branch of the General Staff, and the Purchase and Storage Division was actually operated under him. Gen. Wood was at the head of Purchase and Storage?

The CHAIRMAN. He reported to the Assistant Secretary of War?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. And the Assistant Secretary of War acted upon his recommendations, I presume?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. That is the usual method of conducting the business in the War Department, is it not?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. There was no departure during the war from that usual method, was there?

Gen. DRAKE. Not that I know of; no, sir.

Mr. GREENE. Now, then, the question might come to this. While those trucks were purchased and lodged in the fields unprotected, and stayed there, did other trucks find transportation across the seas?

Gen. DRAKE. Trucks were shipped as the Embarkation Service was able to afford space for them.

Mr. GREENE. What I wanted to get at was whether they stayed there on these fields because it was subsequently found that other trucks were more suitable for use abroad, so they did not begin to take these trucks and shove them across, or did they find the congestion in transportation so great that no trucks were taken, and that is the reason why they stayed? In other words, were those trucks allowed to remain there simply because of the congestion in transportation, or because it was subsequently found that they did not want them?

Gen. DRAKE. It was not because they did not want them; it was due probably to the fact that trucks coming in later were more readily handled for shipment.

Mr. GREENE. Then at no time was it found that these trucks that had been originally purchased for overseas and so stored in these fields were not of a type that would be properly used overseas.

Gen. DRAKE. No, sir; they were all of types that should have been sent overseas.

The CHAIRMAN. You had considerable difficulty at first in getting over such trucks as were needed for our forces on the other side?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. The orders were coming in rapidly and you had storage facilities, and you had to do the best you could under the circumstances?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. You were shipping them to the other side as rapidly as possible, were you not?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. How many trucks did you finally succeed in getting over, that is, American trucks, to the other side?

Col. STIEGER. We had 102,641 vehicles that the Motor Transport Corps was accountable for in the American Expeditionary Forces.

The CHAIRMAN. That includes—

Col. STAYER (interposing). That includes all motors the Army had, except the tractors, which were held by Ordnance.

The CHAIRMAN. Did it also include bicycles and motor cycles?

Gen. DRAKE. It includes motor cycles, but not bicycles. It also includes those we purchased abroad.

The CHAIRMAN. Of the total number you had, how many did you purchase abroad?

Gen. DRAKE. I will insert that figure in the record.

The CHAIRMAN. Did you sell all the vehicles you had of that kind to other governments, or to individuals abroad? In other words, did you bring any back to this country?

Gen. DRAKE. No quantity of them were brought back. There were some with special equipment that were brought back, but the majority of the vehicles were sold overseas. I have a table showing the disposition of all vehicles.

The CHAIRMAN. Will you put a statement in the record showing the character of the different motor-propelled vehicles you had on the other side, and their makes? In other words, state how many motor trucks you had, how many passenger motor cars, of varied makes, and also how many motor cycles you had and what makes they were.

Gen. DRAKE. Yes, sir; I will do that.

The CHAIRMAN. And also how many, of the total number you had on the other side, you have brought back to this country.

Gen. DRAKE. Yes, sir.

The CHAIRMAN. I understood you sold all you had on the other side to the French Government.

Gen. DRAKE. To various governments and to an English syndicate. (The statement above referred to is as follows:)

FROM THE RECORDS OF THE A. E. F., THE FOLLOWING IS A LIST OF MOTOR CYCLES BY NAME.

- | | |
|---------------------|----------------|
| 1. B. S. A. | 9. Imperial. |
| 2. Cleveland. | 10. Indian. |
| 3. Douglas. | 11. Matchless. |
| 4. Enfield. | 12. Peugeot. |
| 5. Excelsior. | 13. Reading. |
| 6. Griffin. | 14. Rover. |
| 7. Harley-Davidson. | 15. Sunshine. |
| 8. Humber. | 16. Triumph. |

	Type.	Sold to French Government.	Sold to other governments.	Shipped to United States.	Surveyed and salvaged.	In operation.	Operated and controlled by other corps.	Total.
1	Passenger cars.....	5,890	2,202	347	1,361	225	221	10,246
2	Light delivery trucks.....	6,843	1,636	179	1,046	188	123	10,015
	Trucks:							
3	1½ to 2 ton.....	9,081	3,361	4	1,209	16	9	13,740
4	3 to 4 ton.....	13,290	6,435	12	1,985	330	87	22,139
5	5 ton or more.....	2,231	333	1	152	1	67	2,785
6	Motor cycles.....	11,798	4,858	2	5,957	303	134	23,052
7	Motor ambulances.....	4,976	1,770	2	785	74	50	7,657
8	Tractors.....	174	1	2	5		171	353
9	Caterpillar tractors.....	224	1	1,603	3		600	2,431
0	Trailers.....	4,706	161	15	581	11	705	6,179
10	Machine-shop truck.....	106	58	1,364	13	2	32	1,575
20	Kitchen trailer.....	88	138		32	55		313
30	Special engineer vehicle.....	1	3	15				19
40	Baldwin winch trucks.....	117	5					122
50	Reconnaissance car.....	37	3	525	24		180	769
60	Disinfectors and fire engines.....	35	1	13	1	1		51
70	Laboratory trucks.....	72	26	41	6	1	6	152
80	Machine-shop trailers.....	54	30	25	14	2		125
90	Tank trucks.....	504	399	23	31	19	3	999
	Special ordnance vehicles.....			30				30
		60,227	21,411	4,203	13,265	1,228	2,388	102,722

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Report compiled from A. E. F. records showing make and capacity of all cargo trucks and trailers sold in Europe to and including Dec. 31, 1919.

Make.	Vehicles.	Make.	Vehicles.
Aries.....	6	Republie.....	11
Atlas.....	2	Rolland-Pellain.....	1
Austin.....	643	Saurer.....	141
Benz.....	7	Selden.....	4
Berliet.....	1	Velle.....	196
Brasier.....	9	White.....	1,977
Buford.....	11	Winton.....	2
Cadillac.....	7	G. M. C.....	1,267
Caledon.....	2	Chenault-Walker.....	7
Charron.....	44	Schneider.....	1
Commerce.....	9	Jeff-Quad.....	2
Daimler.....	60	Dennis.....	434
Darracq.....	3	Liberty.....	6,614
De Dion.....	2	Riker.....	1,222
Delahaye.....	8	Mack.....	1,530
DeLauney-Belleville.....	56	Clydesdale.....	17
Denby.....	16	A. E. C.....	800
De Wald.....	161	Delage.....	1
Diatto.....	2	Sterling.....	18
Dietric.....	4	Crochat.....	4
Dodge.....	1	Schlier.....	870
Federal.....	1,715	Troy.....	202
Fiat.....	212	Ohio.....	194
Ford.....	520	Sampson.....	46
F. W. D.....	6,136	Highway.....	100
Garford.....	3,451	Columbia.....	133
Hotchkiss.....	539	Warner.....	59
International.....	1	Aradia.....	40
Karrier.....	3	Trallmobile.....	1,030
Kelly-Springfield.....	216	Detroit.....	129
La Buire.....	641	Lee.....	121
Lacro.....	5	Rogers.....	57
Latil.....	1	Hok.....	5
Light Aviation.....	41	Briel.....	313
Heavy Aviation.....	433	Thorne.....	6
Martini.....	1,328	Perney.....	206
Moreland.....	2	Buffalo-Pitts.....	14
Nash Quad.....	6,600	Underwriters.....	1
Packard.....	3,642	Obenchain-Meyer.....	1
Paige.....	55	Mobile Laundry.....	4
Panhard-Levasser.....	1	Paquette.....	4
Peerless.....	308	Tankmobile.....	1
Peugeot.....	8	Hoschater-Metzlast.....	2
Pierce-Arrow.....	2,435	Assandord.....	177
Rainier.....	14	French Trailer.....	4
Renault.....	25		
Reo.....	12	Total.....	48,677

Type 1—Statement, by make and capacity, compiled from A. E. F. registration records, of all passenger cars sold in Europe to and including Dec. 31, 1920.

Make.	Cars.	Make.	Cars.
Aguila.....	1	Delahaye.....	2
Aida.....	10	DeLauney-Belleville.....	10
Allenay-Belleville.....	3	Dodge.....	2,899
Allomage.....	1	Dorris.....	15
Aries.....	1	Fiat.....	194
Bayard.....	1	Ford.....	2,445
Benz.....	1	Gennvillers.....	1
Berliet.....	4	Gregorie.....	3
Bollee.....	9	Hotchkiss.....	3
Brasier.....	3	Hispano-Suiza.....	5
Buick.....	5	Hudson.....	28
Cadillac.....	1,536	Isotta-Fraschini.....	1
Chalmers.....	1	La Buire.....	1
Charron.....	5	Le Jin.....	1
Chenard-Walcker.....	10	Le Mans.....	1
Clement-Bayrd.....	4	Leon-Rolls.....	3
Cole.....	26	Lexington.....	1
Cottin-Desgouttes.....	6	Locomobile.....	11
Daimler.....	3	Lorraine-Deitrich.....	21
Darracq.....	10	Lyon.....	2
DeDion-Bouton.....	13	Marmon.....	2
D. F. P.....	2	Martini.....	24
Delage.....	17	McFarland.....	1

Type 1—Statement, by make and capacity, compiled from A. E. F. registration records, of all passenger cars sold in Europe to and including Dec. 31, 1920—Continued.

Make.	Cars.	Make.	Cars.
Mercedes.....	3	Scat.....	1
Minerva.....	1	Schneider.....	5
Mors.....	5	Sigma.....	15
Moto-Bloc.....	2	P. A.....	2
N. A. G.....	1	Spyker.....	1
National.....	96	Studebaker.....	93
Packard.....	27	Sunbeam.....	99
Paige.....	1	Talbot.....	1
Panhard.....	5	Unic.....	4
Panhard-Levassor.....	4	Vauxhall.....	12
Peugeot.....	33	Vinot.....	3
Picard-Pictet.....	1	White.....	51
Pierce-Arrow.....	1	Winton.....	242
Pullman.....	1	Woleley.....	2
Renault.....	29	Zedell.....	1
Rochet-Snyder.....	2		
Reo.....	1	Total.....	8,092
Rolls-Royce.....	1		

Mr. CALDWELL. When you shipped these trucks that came on after these commercial trucks had been purchased, they were shipped in boxes, were they not?

Gen. DRAKE. The shipments of motor cars were made in boxes throughout the war, but motor trucks were not boxed until some time during 1918.

Mr. CALDWELL. But the smaller cars, the passenger cars, were boxed, although the trucks were not boxed until 1918.

Gen. DRAKE. Yes, sir; the Embarkation Service did not handle them boxed until about that time, during the winter of 1917-18.

Mr. CALDWELL. None of these first passenger cars or trucks put on the Hackensack meadows were sent abroad in boxes at all?

Gen. DRAKE. All motor cars shipped by rail were boxed.

Mr. CALDWELL. I am talking about those on the meadows. They were not boxed?

Gen. DRAKE. I never saw those standing on the meadows, so I do not know.

Mr. CALDWELL. Is there any officer here who did see them? I do not want to testify, but I saw them.

Mr. GREENE. To get down to the matter of policy, to clear up that side of it, anyway, were these trucks put on the Hackensack meadows, or in similar locations, about which a good deal has been said—were they at any time sidetracked and left remaining there throughout the war for any reason other than congestion of transportation, and were they sidetracked in any degree because later shipments of trucks were found to be more suitable for the uses overseas?

Gen. DRAKE. I think Gen. Hines can answer that question better than I can.

Mr. GREENE. That is what it comes down to, whether they were really sidetracked, whether it was found they were not what they wanted, or whether they took their share of delay because of the congestion of transportation?

The CHAIRMAN. Evidently there is no officer here who can testify about trucks being sidetracked. Gen. Drake says he knows nothing about it, and when Mr. Caldwell asked whether there was any officer here who knew anything about it, no officer seemed to be able to volunteer any information.

Mr. FIELDS. You were getting trucks to France as rapidly as transportation conditions would permit?

Gen. DRAKE. Yes, sir.

Mr. Greene. That is what this comes down to, whether any trucks were sent abroad while other trucks that might have been sent abroad were kept here?

Mr. CALDWELL. You say you removed a great many trucks from the Hackensack Meadows. What did you do with those trucks?

Gen. DRAKE. They were taken to South Amboy.

Mr. CALDWELL. What happened to them there; were any of them condemned and sold as worthless?

Gen. DRAKE. I could not tell you about any of the individual trucks. There have been a number of unserviceable trucks sold and a number of them transferred to the Agricultural Department from South Amboy.

The CHAIRMAN. For road-building purposes?

Gen. DRAKE. Yes, sir.

Mr. MCKENZIE. What is the make of the particular truck Mr. Caldwell has been asking questions about?

Gen. DRAKE. I have no idea.

Mr. MCKENZIE. You do not know the make of it?

Gen. DRAKE. No, sir.

Mr. MCKENZIE. You do not know whether the same type is in use in the Army at the present time or not, not knowing what type that was?

Gen. DRAKE. I know all types of trucks purchased from the time of the outbreak of the war, so I know they were types that could have been used.

Mr. MCKENZIE. You do not know whether they are using that particular type of truck at the present time?

Gen. DRAKE. I imagine they are, and anything that was shipped overseas; we are using that variety of truck now.

Mr. MCKENZIE. Following Mr. Greene's questions, and trying to find out whether the War Department found itself early in the war with thousands of trucks on its hands bought by some one who did not know much about buying trucks, and found itself with thousands of trucks not suitable for the use to which they wanted to put them, and therefore they stored them on this meadow Mr. Caldwell speaks of, and started in to buy a type of truck they could use—is that what occurred?

Gen. DRAKE. Nothing of that kind occurred.

Mr. CALDWELL. You do not know what character of trucks there were that were put on the Hackensack Meadow, how many different kinds there were, whether there were 5, or 10, or 15 different kinds of trucks?

Gen. DRAKE. No, sir.

Mr. CALDWELL. Do you know whether or not Gen. Pershing had made a request that something of a standard make of truck be sent to him so that they would have many different kinds of trucks, so they could be more easily handled?

Gen. DRAKE. I do not know that he ever made such a request.

Mr. CALDWELL. You know that along toward the latter part of the war they did try to standardize the trucks sent abroad, and limited the number of kinds?

Gen. DRAKE. We did that from the beginning.

Mr. CALDWELL. So that if there were more kinds of trucks than the ones you standardized to send abroad, in that Hackensack park, that might account for the reason why they were there, might it not?

Gen. DRAKE. It might, but it did not.

Mr. CALDWELL. Why were they there?

Gen. DRAKE. I do not know, except that we had——

Mr. CALDWELL (interposing). How can you say that did not account for it if you do not know why——

Gen. DRAKE (interposing). I do not know why the Embarkation Service could not find the ships. All supplies transported to any port of embarkation were turned over to some official at the port for shipment overseas.

Mr. CALDWELL. But according to Mr. Crowell's statement to this committee, these never were turned over for shipment, but they were put out there awaiting shipment.

Gen. DRAKE. That was lack of coordination between them.

Mr. CALDWELL. You never saw those trucks?

Gen. DRAKE. No, sir.

Mr. CALDWELL. Have you ever seen any record that shows the character of trucks that were there?

Gen. DRAKE. I probably have; yes, sir.

Mr. CALDWELL. Can you tell me about how many different kinds of trucks there were there, if you have seen the record of them.

Gen. DRAKE. That was just a mere detail matter and I would not recall.

The CHAIRMAN. When did Mr. Crowell make a statement like that?

Mr. CALDWELL. At a war council meeting on Friday morning at the War Department.

Mr. GREENE. Your relation and responsibility in reference to all this, of course, is that after the trucks are purchased you operate them?

Gen. DRAKE. Yes, sir.

Mr. GREENE. You do not supply them in any sense?

Gen. DRAKE. We did not do the purchasing.

Mr. GREENE. I mean supply in the sense of original purchase.

Gen. DRAKE. Not since September, 1918, at the time of the organization of the Motor Transport Corps.

Mr. GREENE. Your function has been the operation of that which has been purchased for you?

Gen. DRAKE. Yes, sir.

Mr. McKENZIE. At the time of the signing of the armistice you found yourself with a good many continuing contracts for trucks and automobiles?

Gen. DRAKE. Yes, sir.

The CHAIRMAN. Gen. Drake will put in the hearing a full statement showing what property he had on hand at that time and the condition of the contracts with respect to deliveries?

Gen. DRAKE. Yes, sir.

Mr. McKENZIE. I think it would be well in that statement to show the number of trucks received by the Army monthly down to date because we will undoubtedly be asked questions on the floor in regard to that. The information I think we ought to have is how many trucks you have been receiving and from whom, right down to date.

MOTORS AND VEHICLES DIVISION, OFFICE OF THE DIRECTOR OF PURCHASE.

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motor cycles and side cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918.

(NOR).—These figures do not include any emergency purchases made at camps or cantonnements or any vehicles acquired by the Construction Division, Quartermaster Corps, through rental agreements.

[illegible]

[illegible]

ARMY APPROPRIATION BILL, 1921.

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motorcycles and side cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production.															
	Quantity.		1917							1918						
	Ordered.	Canceled.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.
Trucks and chassis (commercial), 1-1-ton—Continued.																
Superior, 1-1-ton, Superior Motor Truck Co., Atlanta, Ga.	1						1									
Studebaker, 1-ton, Studebaker Corp., Detroit, Mich.	2					1										
White Tebo, type 2A, 1 ton, White Co., Cleveland, Ohio.	2, 008												105	227	349	302
Miscellaneous, 1-ton, various dealers.	7									3		3				1
Total.....	10, 638	5	7	19	22	94	54	193	117	22	46	35	143	373	506	532
Light aviation (model G. M. C. 23), 1-ton, assembled by:																
General Motors Corp., Pontiac, Mich.	2, 400								9	57	177	157	80	425	351	315
Denby Motor Truck Co., Detroit, Mich.	500															
Palgo Motor Car Co., Detroit, Mich.	500															
Republic Motor Car Co., Alma, Mich.	500	13														
Total.....	3, 900	13							9	57	177	157	80	425	351	315
Standardized chassis A:																
White, type 3A, 1-2 ton, assembled by White Co., Cleveland, Ohio.	9, 564	5, 000		1			96	72	47	16	51		13	4	56	2
Peerless, 1-2-ton, assembled by Peerless Motor Co., Cleveland, Ohio.	3, 000	3, 000														
Total.....	12, 564	8, 000		1			96	72	47	16	51		13	4	56	2

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[illegible]

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motorcycles and side cars, rear cars, and bicycles purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production.																
	Quantity.		1917												1918		
	Ordered.	Cancelled.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	
Trucks and chassis (commercial), 3-4-ton:																	
Atterbury, 3-ton, Atterbury Motor Truck Co., Buffalo, N. Y.	5									5							
Dunby, 3-ton, Dunby Motor Truck Co., Detroit, Mich.	15				1												
Federal (model W), 3-ton, Federal Motor Truck Co., Detroit, Mich.	512	250								5							
Garford, 3-ton, Garford Motor Truck Co., Lima, Ohio.	105			4	11	9	6	6	8	2	13	14	10			20	
Gramm-Bernstein (model G-B-1918), 3-ton, Gramm-Bernstein Motor Truck Co., Lima, Ohio.	141	50									2						
Hurlburt, 3-ton, Hurlburt Motor Truck Co., New York, N. Y.	86																
Indiana, 3-ton, Indiana Truck Corp., Marion, Ind.	1																
Mack, type 4B, 3-ton, International Motors Corp., New York, N. Y.	374								3		29	102	119	34			
Kelly-Springfield (model K 40), 3-ton, Kelly-Springfield Motors Corp., Springfield, Ohio.	929	460															
Moreland (model 17-G), 3-4-ton, Moreland Motor Truck Co., Los Angeles, Calif.	170			1	6	1	10		31				7	1	2	2	
Packard (model E), 3-ton, Packard Motor Car Co., Detroit, Mich.	10,110	3,755	3	9	5		116	214	160	1,001	597	419	469	8	760	355	
Pearless (heavy duty), 3-ton, Peerless Motor Car Co., Cleveland, Ohio.	628																
Pearless (heavy duty), 4-ton, Peerless Motor Car Co., Cleveland, Ohio.	11																
Republic (model T), 3-ton, Republic Motor Truck Co., Rochester, N. Y.	293	125										2	14	14			

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Riker, type 4B, 3-ton, Locomobile Co. of America, Bridgeport, Conn.	2,173	1	2	1	1	1	1	254	127	721	765	231	144	144	122
Riker, type 5B, 4-ton, Locomobile Co. of America, Bridgeport, Conn.	41						40							1	
Selden (model N.L.), 3 1/2-ton, Selden Motor Truck Co., Rochester, N. Y.	252	50			19	40	28	8	17	20					
Signal, 3-ton, Signal Motor Truck Co., Detroit, Mich.	1								1						
Standard (model 65), 3 1/2-ton, Standard Motor Truck Co., Detroit, Mich.	326	75				20									
Velle (model 25-B), 3-ton, Velle Motors Corp., Moline, Ill.	74				30	15		1			3				
White (model TAD), 3-ton, White Co., Cleveland, Ohio.	15					5				7					
Master, 3-ton, Master Motor Truck Co., New York, N. Y.	3				1										
Total.....	16,764	4,765	4	16	23	12	181	302	270	1,276	785	721	765	231	499
Trucks and chassis, 5-7 1/2-ton: Peerless, 5-ton, Peerless Motor Car Co., Cleveland, Ohio.	9														
Denby, 5-ton, Denby Motor Truck Co., Detroit, Mich.	6														
Doane, 5-ton, Doane Motor Truck Co., San Francisco, Calif.	4			1											
Federal (model X), 5-ton, Federal Motor Truck Co., Detroit, Mich.	307	150													
Garford, 5-ton, Garford Motor Truck Co., Lima, Ohio.	20									1					
Garford, 6-ton, Garford Motor Truck Co., Lima, Ohio.	21														
Gramm-Bernstein, 5-ton, Gramm-Bernstein Motor Truck Co., Lima, Ohio.	11							1	2			8			
Hurlburt, 5-ton, Hurlburt Motor Truck Co., New York, N. Y.	214	100													
Mack, type 5B, 5 1/2-ton, International Motors Corp., New York, N. Y.	5,475	2,010					163	214	174	100	100	200	200	200	200
Mack (special engine), type 5B, 7 1/2-ton, International Motors Corp., New York, N. Y.	1						1								
Packard, 5-ton, Packard Motor Car Co., Detroit, Mich.	33									2	5	20			
Packard, 5-ton, Packard Motor Car Co., Detroit, Mich.	8							2							4
Packard, 7-ton, Packard Motor Car Co., Detroit, Mich.	5	5													
Pierce-Arrow (model FA), 5-ton, Pierce-Arrow Motors Corp., Buffalo, N. Y.	2,322	600					31	1		336	405	227	10		

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motorcycles and side cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production.																
	Quantity.		1917												1918		
	Ordered.	Canceled.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	
Trucks and chassis, 5-7½-ton—Con. Republic, 5-ton, Republic Motor Truck Co., Alma, Mich.	8																
Standard, 5-ton, Standard Motor Car Co., Detroit, Mich.	72									20				30	20		
United, 5-ton, United Motors Corp., Grand Rapids, Mich.	5								5								
Velle, 5-ton, Velle Motors Corp., Moline, Ill.	3								3								
White (model TGD), 5-ton, White Co., Cleveland, Ohio.	55					2							40				
Grand total.	72,523	32,630	4	16	24	14	181	202	524	1,720	1,474	1,701	1,603	989	1,740	2,180	
Four wheel drive trucks and chassis 2-3 ton:																	
Nash Quad (TT type), 2-ton, as- sembled by—	14,681	4,025				103	160	36	42	450	381	401	607	637	712	800	
Nash Motors Co., Kenosha, Wis.																	
Hudson Motor Car Co., Detroit, Mich.	3,000	2,500															
National Motor & Vehicle Corp., Indianapolis, Ind.	3,000	1,000															
Paige-Detroit Motor Co., De- troit, Mich.	3,000	1,500															
Total.	23,681	9,025				103	160	36	42	450	381	401	607	637	712	800	
F. W. D. (model B), 3-ton, assem- bled by—																	
Four Wheel Drive Auto Co., Clintonville, Wis.	6,665	1,000					12			211	329	164	282	324	367	418	
Mitchell Motors Co., Racine, Wis.	5,523	2,000											16	76	89	73	

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Monthly production.

Description, capacity, manufacturer, and address.	Quantity.		1917							1918						
	Ordered.	Cancelled.	April.	May.	Jun.	July.	August.	Septem- ber.	Octo- ber.	Novem- ber.	Decem- ber.	Janu- ary.	Febru- ary.	March.	April.	May.
Fire apparatus—Continued.																
Triple combination engines, Abrams	10												1			
Fox Fire Engine Co.																
Chemical car (Dodge chassis), Peter	1															
Pirsch Co.																
Triple combination engines, 750- gallon, Robinson Fire Apparatus	4														2	
Co.																
Triple combination engines, 500- gallon, South Bend Motor Car	2															
Wicks, South Bend, Ind.																
Chemical cars (Ford chassis), Pros- pect Manufacturing Co.	8															
Chemical cars (Ford chassis), O. J. Childs Co.	7									1						
Triple combination pump, chemi- cal and hose, 730-gallon, Seegrave Manufacturing Co.	13															
Total.....	314	11					3	1		6	1	16	6	1	3	
Passenger cars:																
Touring, 5-passenger, Buick Motor Car Co., Flint, Mich.	24		1			2					1	2	2	1		3
Landaulet, 7-passenger, Cadillac Motor Car Co., Detroit, Mich.	8							8								
Limoisine (heavy CL), type 1, 7- passenger, Cadillac Motor Car Co., Detroit, Mich.	1,012	705						16	8	13	20	5		15	45	2
Sedan, 5-passenger, Cadillac Motor Car Co., Detroit, Mich.	24								24							
Roadster, 2-passenger, Cadillac Motor Co., Detroit, Mich.	5						1		2							1
Touring cars (heavy CL), type 1, 7-passenger, Cadillac Motor Car Co., Detroit, Mich.	3,048	1,075		36	3	16	44		155	262	65	205	185	115	157	8

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Monthly production.

Description, capacity, manufacturer, and address.	Quantity,		1917						1918							
	Ordered.	Can. eld.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.
Passenger cars—Continued.																
Touring, 7-passenger, Packard Motor Car Co., Detroit, Mich.	18								1	16	1					
Touring, 7-passenger, Paige Motor Car Co., Detroit, Mich.	1							1								
Runabouts (second-hand) 1915, 2-passenger, Regal Motor Car Co., Detroit, Mich.	1															1
Touring (Oldsmobile), 7-passenger, Olds Motor Co., Lansing, Mich.	2															1
Touring, 5-passenger, Peo Motor Car Co., Detroit, Mich.	16				1	2	1			10	2					
Touring, 5-passenger, Rue Motor Car Co., Detroit, Mich.	6						6									
Touring, 5-passenger, Saxon Motor Car Co., Detroit, Mich.	1													1		
Touring, 5-passenger, Stearns Motor Car Co., Detroit, Mich.	1										1					
Combination wagons, 12-passenger, Studebaker Corp., Detroit, Mich.	6					5	1									
Touring, 7-passenger, Studebaker Corp., Detroit, Mich.	25		1	2	7	2	11	2								
Touring, 5-passenger, Valie Motors Corp., Detroit, Mich.	1						1									
Runabout, 2-passenger, White Motor Car Co., Cleveland, Ohio.	1							1								
Touring, 7-passenger, White Motor Car Co., Cleveland, Ohio.	1								1							
Touring, 8-passenger, Willys-Overland Corp., Toledo, Ohio.	7						1	1		1		1	8			
Runabout, 2-passenger, Willys-Overland Corp., Toledo, Ohio.	1														1	
Touring (miscellaneous), 5-passenger, various dealers.	10			2			3	1	2		1					
Total.	37,144	19,747	3	145	52	182	351	295	648	755	845	560	492	467	1,278	572

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G. M. C. standardized chassis "A.A.", type 2A, 1-1-ton, assembled by:												
Commerce Motor Car Co., Detroit, Mich.												450
Vale Motor Corporation, Moline, Ill.												1,000
Elgin Motor Car Co., Elgin, Ill.												498
Lexington-Howard Co., Commerceville, Ind.												500
Armstrong Motor Co., Auburn, Ind.												500
Propp Motor Co., Detroit, Mich.												500
Saxon Motor Co., Detroit, Mich.												500
Liberty Motor Co., Detroit, Mich.												500
Columbia Motor Co., Detroit, Mich.												500
Moore Motor Car Co., St. Louis, Mo.												500
Total												4,988
Trucks and chassis (commercial), 1-1-ton:												
Commerce, model O, 1-ton, Commerce Motor Car Co., Detroit, Mich.	312	351	399	290	207							1,549
Denby Lion, Denby Motor Truck Co., Detroit, Mich.					2	3						5
Ford, model T, 1-ton, Ford Motor Car Co., Detroit, Mich.	105	30	37		25							990
Federal, Federal Motor Car Co., Detroit, Mich.						1						1
Hudford, 1-ton, Hudford Motor Car Co., Chicago, Ill.												1
Kentucky, 1-ton, Kentucky Wagon Works, Louisville, Ky.												2
Lillard-Swart, 1-ton, Lillard-Swart Co., Buffalo, N. Y.												8
Master, 1-ton, Master Motor Truck Co., Chicago, Ill.												1
Maxwell, 1-ton, Maxwell Motor Car Co., Detroit, Mich.												1
Moreland, 1-ton, Moreland Motor Truck Co., Los Angeles, Calif.					2							9
Packard, 1-ton, Packard Motor Car Co., Detroit, Mich.												1
Reo, 1-ton, Reo Motor Car Co., Lansing, Mich.												199
Smith Form-A-Truck, 1-ton, Smith Motor Corp., Detroit, Mich.	2			1								185
Rue, 1-ton, Rue Motor Truck Co., Chicago, Ill.												5
Superior, 1-ton, Superior Motor Truck Co., Atlanta, Ga.												1
Studebaker, 1-ton, Studebaker Corp., Detroit, Mich.												2

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Republic Motor Co., Alma, Mich.	150	204	175	143	41	60	272	169	30	1,447	1,083	256	146	170	152	18,005
Selden Motor Truck Co., Milwaukee, Wis.	164	274	134	121	34	41	114	243	109	96	85					1,750
Service Motor Truck Co., Wabash, Ind.	60		33	20	124	139	148	177	143	51		49	1			1,045
Sterling Motor Truck Corp., Milwaukee, Wis.	70	28	90	85	107	21	31	174	96	88	121	31	5			1,045
U. S. Motors Corp., Cincinnati, Ohio	100	68	119	34	56	22	168	207	39	62	33	11	13			1,045
Velle Motors Corp., Moline, Ill.	61	32	108	42	128	49	54	143	89	85	121	35	14			1,045
Total	1,383	1,524	1,447	1,606	1,495	644	1,120	1,968	1,547	1,447	1,083	256	146	170	152	18,005
Trucks and chassis (commercial), 3-4-ton:																
Atterbury, 3-ton, Atterbury Motor Truck Co., Buffalo, N. Y.																5
Denby, 3-ton, Denby Motor Truck Co., Detroit, Mich.					14											15
Federal (model W), 3-ton, Federal Motor Truck Co., Detroit, Mich.					7	85	165		1							262
Gardner, 3-ton, Gardner Motor Truck Co., Lima, Ohio.					1											105
Gramm-Bernstein (model GB-1918), 3-ton, Gramm-Bernstein Motor Truck Co., Lima, Ohio.	2	12			25		50									91
Hurlburt, 3-ton, Hurlburt Motor Truck Co., New York, N. Y.					11	75										86
Indiana, 3-ton, Indiana Truck Corp., Marion, Ind.		1														1
Mack, type 4B, 3-ton, International Motors Corp., New York, N. Y.			84		3											374
Kell-Springfield (model K-40), 3-ton, Kell-Springfield Motors Corp., Springfield, Ohio.	1				6	2	21	25	83	82	149	100				469
Moreland (model 17-G), 3-ton, Moreland Motor Truck Co., Los Angeles, Calif.				1	1	22	37	46								170
Packard (model E), 3-ton, Packard Motor Car Co., Detroit, Mich.			400			55	178	333	361	575						6,355
Peerless (heavy duty), 3-ton, Peerless Motor Car Co., Cleveland, Ohio.						293	147	188								628
Peerless (heavy duty), 3-ton, Peerless Motor Car Co., Cleveland, Ohio.					10	1										11
Reilly (model T), 3-ton, Reilly Motor Car Co., Rochester, N. Y.						13		125								108
Robertson, 3-ton, Robertson Co., Alhambra, California.																2,172
River, 3-ton, River Motor Car Co., of America, Bridgeport, Conn.	140	142		174	89	75	43	121	118	103						41
Selden (model N), 3-ton, Selden Motor Truck Co., Rochester, N. Y.																202
Signal, 3-ton, Signal Motor Truck Co., Detroit, Mich.					3	41	26		1							1

ARMY APPROPRIATION BILL, 1921.

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motorcycles and side cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production—Continued.															Quantity produced.
	1918						1919									
	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	
Trucks and chassis (commercial), 3-4-ton—Continued.																
Standard (model 65), 3½-ton, Standard Motor Truck Co., Detroit, Mich.					5	1	2	86	84	33						251
Vellie (model 25-B), 3-ton, Vellie Motors Corp., Moline, Ill.						16	9									74
White (model TAD), 3-ton, White Co., Cleveland, Ohio.		2	1													15
Master, 3-ton, Master Motor Truck Co., New York, N. Y.			2													3
Total.	383	246	487	175	175	594	638	1,089	647	813	149	100				11,499
Trucks and chassis, 5-7½-ton:																
Peerless, 5-ton, Peerless Motor Car Co., Cleveland, Ohio.					2	7										9
Denby, 5-ton, Denby Motor Truck Co., Detroit, Mich.					6											6
Doane, 6-ton, Doane Motor Truck Co., San Francisco, Calif.	3															4
Federal (model X), 5-ton, Federal Motor Truck Co., Detroit, Mich.					7		53	97								187
Garford, 5-ton, Garford Motor Truck Co., Lima, Ohio.					11	8										20
Garford, 6-ton, Garford Motor Truck Co., Lima, Ohio.		10			2	9										21
Gramm-Bernstein, 5-ton, Gramm-Bernstein Motor Truck Co., Lima, Ohio.																11
Hurlburt, 5-ton, Hurlburt Motor Truck Co., New York, N. Y.						14			8	30		14	24	17	7	114
McK, type 3B, 3½-ton, International Motors Corp., New York, N. Y.	200	200	115	300	206	265	186	186	201	134	31					3,165

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ARMY APPROPRIATION BILL, 1921.

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motor cycles and side cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production—Continued.															Quantity produced.
	1918							1919								
	June.	July.	August.	Sep- tember.	Octo- ber.	Novem- ber.	Decem- ber.	Jan- uary.	Febru- ary.	March.	April.	May.	June.	July.	August.	
Four wheel drive trucks and chassis, 2-3-ton—Continued.																
F. W. D. (winch type), 3-ton, as- sembled by Four Wheel Drive Auto Co., Clintonville, Wis.				82	268	56	61	62	25	142	104					
Total.	1,331	1,380	1,458	2,144	3,357	2,656	2,507	2,573	1,872	1,542	794	509	387			800
Electric trucks, 1½-2-ton:																29,244
Elwell-Parker Elec. Co., New York, N. Y.																10
Automatic Transportation Co., Buf- falo, N. Y.																11
United Electric Vehicle Co., San Francisco, Calif.																1
Total.																22
Fire apparatus:																
Pump and hose car, 350-gallon, Amer- ican La-France Co., Elmira, N. Y.				3												3
Combination engine, 600-gallon, Amer- ican La-France Co., Elmira, N. Y.	2		3	10	5	6	2		1	1						31
Combination engine, 750-gallon, Amer- ican La-France Co., Elmira, N. Y.	12	6	4	10	5			3								48
Combination engine, 1,000-gallon, American La-France Co., Elmira, N. Y.																1
A-6 combination hose cart (Brook- way), American La-France Co., Elmira, N. Y.	1		6	17	2	7		4	1							39
Triple pump, American La-France Co., Elmira, N. Y.	2	1	1					1								6
Ford chemical car, American La- France Co., Elmira, N. Y.									1							14
Combination fire truck (Ford), Buck- eye Manufacturing Co.				28	58	3		1			2					97

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ARMY APPROPRIATION BILL, 1921.

Report on production of motor vehicles (ambulances, trucks and chassis, fire apparatus, passenger cars, motorcycles and side cars, rear cars, rear cars, and bicycles) purchased by all corps and bureaus of the Army of the United States from April, 1917, to November, 1918—Continued.

Description, capacity, manufacturer, and address.	Monthly production—Continued.														Quantity produced.	
	1918							1919								
	June.	July.	August.	Septem- ber.	Octo- ber.	Novem- ber.	Decem- ber.	Janu- ary.	Febru- ary.	March.	April.	May.	June.	July.		August.
<i>Side cars:</i> Harley-Davidson, Harley-Davidson Motorcycle Co., Milwaukee, Wis. Indian, Indian Manufacturing Co., Springfield, Mass. Excelsior, Excelsior Motorcycle Co., Chicago, Ill. Miscellaneous, various dealers	989	1,274	684	1,361	2,111	1,486	942	762	506							15,994
	1,266	1,460	1,225	1,248	1,210	2,510	816	1,799	650	888	68			163		19,732
			11													24
																1
Total	2,135	2,734	1,920	2,609	3,323	3,990	1,758	2,561	1,156	888	68			163		35,745
<i>Rear cars: Cymet, Cymet Rear Car Co., Buffalo, N. Y.</i>	8		10	21												183
<i>Motorcycles:</i> Davis (military standard), Davis Sewing Machine Co., Dayton, Ohio. Great Western (military standard), Great Western Manufacturing Co., Laporte, Ind. Westfield (military standard), M. T. C. (standard), Westfield Manufac- turing Co., Westfield, Mass. Savage-Savage Arms Co., Sharon, Pa. Ives-Johnson, Ives-Johnson Manu- facturing Co., Hartford, Conn. Miscellaneous, various dealers	5				1,992	1,260		248	1,950	1,300						6,756
						3,106	483	775	1,588	298						6,250
	135	2,385	500	1,325	3,187	1,941	907	2,990								23,613
		88														97
				299	15											8
	2	11	601													1,813
Total	142	2,494	1,101	1,824	5,194	6,307	1,390	4,013	3,538	1,598						39,537

The CHAIRMAN. I presume you can also tell us about tires you have received, both before the signing of the armistice, during the war, and also those you have received since?

Gen. DRAKE. I will try to obtain that information; yes, sir.

ARMY APPROPRIATION BILL, 1921.

Status of net replacement of each size of tire, casing, and tube purchased during the war to July 1, 1919, by the different districts and zone supply depots as noted at head of each column; also balance due the Purchase and Supply Division July 1, 1919, from uncompleted contracts.

	Purchase and storage M. & V. Division balance sheet since sheet pages 1 to 43.	Chicago district balance sheet, pages 70 to 95.	New York district balance sheet, pages 103 to 110.	Ordnance balance sheet, page 112.	Medical Corps balance sheet, pages 114 to 117.	L. & H. aviation balance sheet, page 119.	Engineer balance sheet, pages 120 and 121.	Boston, Balti- more, San Fran- cisco, St. Louis, Omaha, Atlanta, San An- tonio, balance sheet, pages 123 to 131.	Total units.	Ave- age unit cost.	Total units weight.	Total units value.	Pur- chase and stor- age units due.	Pur- chase and stor- age value due.
26 by 3.	800							24	894	1.06	44	928.20	36,314	43,213.66
28 by 3.	196,477	168	1,763						198,240	1.58	94.12	313,219.20		
29 by 3.	21				119				28,308	1.81	23	51,557.48		
30 by 3.	19,899	8,147	134		4				28,195	1.50	21.14	42,282.50	2,700	3,834.00
31 by 3.	174,637	12,453	197	5,000	155			21	192,869	1.95	168.49	375,509.55	43,176	79,875.60
31 by 4.	19,411	4,437			14			77	23,892	2.34	20.80	55,883.88	180	397.80
32 by 3.	18	4,060	142		8		25	80	4,333	2.06	4.33	8,925.98		
32 by 4.	560	1,440	36					7	2,043	2.42	2.04	4,944.06		
33 by 4.	81,954	33,022	444	6,100	8		106	140	120,784	2.46	120.07	297,064.84	13,570	31,618.10
33 by 5.	1,562	931							2,493	3.06	3.11	7,703.37		
34 by 4.	4	1,733	158					16	34	4.04	2.03	96.96		
34 by 5.	260	5,848	78		66			6	1,898	2.73	2.60	4,896.84		
35 by 4.	400	1,250	12				16	45	6,256	4.06	8.64	25,454.25		
35 by 5.	6,594	3,262	31		7			124	1,804	3.21	2.70	5,798.94		
35 by 6.	59,628	87,781	44		23,870	1,007		139	9,912	3.13	16.15	31,024.56	490	1,332.00
36 by 5.	160								172,469	3.78	301.82	651,932.82	1,000	3,570.00
36 by 6.	228	360	5						160	7.41	1.04	1,186.00		
36 by 7.	6,968	252		4,028	4				490	3.76	1.72	1,842.40		
37 by 5.	3,563	1,391	122		5				10,947	5.88	41.06	64,398.86		
38 by 5.	3,160	15,118						7	6,883	3.34	28.94	23,187.92	400	1,468.00
40 by 6.	3,200	2							21,268	9.24	106.94	195,642.12	30	264.60
815 by 105.	5,785								5,785	2.46	5.79	14,285.70		
815 by 120.	1,500								1,500	3.11	1.97	4,663.00		
820 by 120.	600								1,000	3.17	1.76	3,170.00		
875 by 105.	1,750								1,750	2.82	2.40	4,910.00		
880 by 120.	12,500							4	12,804	3.16	17.19	39,812.64		
880 by 135.	253								253	8.84	50	2,223.00		
915 by 105.	550								550	2.22	1.82	1,210.00		
920 by 120.	750								750	3.28	1.31	2,400.00		
935 by 135.	1,125								1,125	3.60	3.93	4,050.00		

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Status of net replacement of each size of tire, casing, and tube purchased during the war to July 1, 1919, by the different districts and zone supply depots as noted at head of each column; also balance due the Purchase and Storage Division July 1, 1919, from uncompleted contracts—Continued.

	Purchase and Storage M. & V. Division balance sheet, pages 1 to 48.	Chicago district balance sheet, pages 70 to 98.	New York district balance sheet, pages 103 to 110.	Ordnance balance sheet, page 112.	Medical Corps balance sheet, pages 114 to 117.	L. & H. aviation balance sheet, page 119.	Engineer balance sheet, pages 120 and 121.	Boston, Baltimore, San Francisco, St. Louis, Omaha, Atlanta, San Antonio, balance sheet, pages 123 to 131.	Total units.	Average unit cost.	Total units weight.	Total units value.	Purchase and Storage units due.	Purchase and Storage weight due.	Purchase and Storage value due.
Casings—Con.															
34 by 5.		5							5	37.53	.07	137.65			
35 by 5.		10							10	42.00	.09	420.00			
36 by 4.		30							30	39.30	.45	1,179.00			
37 by 4.		53							53	40.34	.87	2,138.02			
37 by 4 1/2.		650							654	42.49	11.77	27,798.46			
37 by 6.		1,330							1,330	41.41	29.92	55,075.30			
38 by 5 1/2.		2							95	75.28	.07	150.56			
38 by 6.		95							95	104.65	.13	9,932.25			
38 by 7.		2,007							2,012	51.35	11.06	30,884.20			
38 by 8.		25							25	33.13	.49	828.25			
Totals.	521,387	234,442	2,805	9,000	14,375	1,007	125	914	784,145		7,831.47	15,654,001.56	28,800	232.29	426,256.46
Solids:															
32 by 3 1/2.	1,370	294						45	1,691	19.59	63.03	32,913.98			
34 by 3.	1,793	3,738						7	5,536	22.30	123.36	123,943.82			
34 by 4.	2,091	1,198						3	3,289	26.16	147.73	85,893.28			
34 by 5.	53	40						7	100	32.33	50.00	3,233.00			
34 by 6.	50	312						1	363	40.99	24.50	14,870.37			
34 by 7.	1,399								1,399	46.70	123.31	64,563.51	100	9.00	4,418.00
36 by 3.	25							3	37	18.63	1.06	543.01			
36 by 4.	1,448	3,111	44					40	4,643	20.53	197.33	95,320.70			
36 by 5.	16,480	6,060	200					25	23,745	24.80	1,092.75	594,572.00	43	2.06	1,007.06
36 by 6.	17,024	76,332	142			1,800		40	95,338	38.11	6,484.44	3,632,331.15			
36 by 7.	35,778	6,896	2	4,288				8	48,987	44.68	4,014.44	2,187,398.74	21	1.72	885.90
36 by 10.	6,400	7,400	41			1,800		6	13,901	52.43	1,348.88	728,230.43			
37 by 4.	6,157	7,151							15,084	84.01	2,452.77	1,268,048.04			
37 by 7.	4	468	104						571	27.53	39.00	11,710.64			
37 by 7 1/2.	4	394							398	58.93	73.00	23,450.10			

ARMY APPROPRIATION BILL, 1921.

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38 by 5	2,890	1,553	4							10	4,447	37.97	322.40	168,852.59			
40 by 5	1,582	2,287	12							40	1,929	39.78	176.60	77,121.42			
40 by 6	3,239	89,631	2							2	89,674	30.78	9,886.14	3,575,167.72	69	7.59	2,691.54
40 by 7	32	34									86	58.34	11.16	4,945.24			
40 by 10	487	21								2	509	76.09	92.84	38,729.81			
40 by 12	1,435	34									4,215	119.71	927.30	594,877.65			
42 by 6	1,98	85								5	185	45.89	24.42	8,484.10			
42 by 8	1,000										1,000	35.49	65.00	30,460.00	1,000	65.00	33,470.00
60 by 8	734										734	121.79	433.60	89,371.84			
1,240 by 100	1,543										1,543	34.74	38.62	53,673.30			
1,350 by 130	389										389	66.84	10.95	30,156.20			
1,800 by																	
28 by 3	100										104	33.29	3.00	3,329.00			
32 by 3	400									4	422	25.79	5.27	5,011.36			
32 by 4	1,546									68	2,619	25.79	108.88	67,544.91			
32 by 5										12							
32 by 6	154										136	35.69	10.76	8,770.38			
37 by 5	216									11	221	25.59	20.27	17,076.04			
37 by 6	281									37	221	18.29	20.27	17,076.04			
41 by 5	4									8	263	55.26	25.21	11,413.04			
41 by 6	106									10	219	18.25	17.40	11,790.00			
21 by 3											24	14.28	20.27	342.72			
15 by 3											24	10.86	12.42	260.62			
16 by 3											2	15.63	.01	31.26			
29 by 2	2										2	42.38	.03	84.72			
32 by 2	100										100	9.74	2.15	974.02			
32 by 3	320										320	12.01	8.64	3,843.20			
32 by 4	40									5	35	25.31	1.36	885.85			
33 by 3	530										530	22.83	21.20	12,099.90			
35 by 3	172										179	21.15	4.250.40	179.21.15			
35 by 4	396									4	396	30.24	18.81	11,975.04			
35 by 6	1										1	46.59	10.07	46.59			
37 by 3	224										224	25.59	10.52	5,732.16			
37 by 10	18										18	102.32	1.80	1,841.78			
38 by 6	188										188	48.43	14.57	9,114.85			
38 by 5	20										20	41.83	1.50	886.60			
37 by 3	21										24	23.45	1.06	582.80			
36 by 12	222										222	116.49	43.50	27,025.68			
32 by 3	113										113	21.77	3.50	2,480.01			
40 by 4	1										1	37.07	3.07	37.07			
38 by 7	6										6	38.66	.48	281.96			
42 by 9	3										3	47.66	.45	142.96			
44 by 10	13										13	53.22	2.27	688.64			
40 by 8	6										6	58.25	1.06	868.50			
29 by 34	400										400	39.19	6.00	15,676.00			
Total	100,523	207,532	754		5,288					411	325,983		28,034.55	13,655,363.72	1,333	88.37	45,515.59
Grand total	1,226,310	694,701	7,046		28,511					2,212	2,008,220		37,496.42	31,641,405.17	128,043	402.27	637,865.81
Value	14,081,258.61	15,354,710.74	110,435.67		558,984.98					42,855.10				31,641,405.17			

The CHAIRMAN. Is there anything else in connection with your branch of the transportation service that you desire to state to the committee?

Gen. DRAKE. No, sir; nothing further.

The CHAIRMAN. How many men will be in your force, assuming that we will have an enlisted strength of 175,000 men?

Gen. DRAKE. The authorized strength approved by the Chief of Staff for an army of 300,000 men was 11,009 men for the Motor Transport Corps, which would have to be reduced proportionately.

The CHAIRMAN. Will you kindly put those figures in the record?

Gen. DRAKE. That is beyond my province, because it is a matter for the War Department to decide.

The CHAIRMAN. If you were to tell him that we desire that information you could get it from him and put it in the hearing?

Gen. DRAKE. I might be able to; yes, sir.

Personnel considered necessary for the Motor Transport Corps in accordance with tables of organization to meet the needs of an Army of approximately 175,000 men.¹

Line number.	Units.	Number of units.	General officers.	Colonels.	Lieutenant colonels.	Majors.	Captains, first lieu-tenants, second lieu-tenants.	Total commissioned.	Sergeants, M. T. C. grade, M. T. C. senior	Quartermaster ser-geants, M. T. C.	Sergeants, first class.	First sergeants.	Sergeants.	Corporals.	Cooks.	Privates, first class.	Privates.	Total enlisted.	Aggregate.	Remarks (tables of or-ganization referred to below are of Jan. 15, 1919).	
1	Office chief Motor Transport Corps.	1	1	2	3	4		10	2	4								6	16		
2	Designers and engineers.	1		1	2	2		5	4	2	4							10	15		
3	Schools.	1		1	1	4	52	58	4	8	40	4	75	75	24	25	150	405	483		
4	Department Motor Transport officers.	9		1	4	5	9	18			18		9	9				38	54		
5	Motor Transport general depots, etc.	6		2	2	5	9	18			20		54	4	4	6	11	99	117		
6	Total, overhead.		1	6	12	20	70	109	10	14	82	4	138	88	28	31	161	556	665		
7	Motor Transport companies.	60					60	60										2,640	2,700	T. of O. 358, series D.	
8	Motor-cycle companies.	3					3	3										105	111	T. of O. 359, series D.	
9	Headquarters motor commands.	15					30	30										120	120	T. of O. 357, series D.	
10	Service park units.	40					40	40										80	720	T. of O. 360, series D.	
11	Repair units.	6				6	126	132	96		6		1,152	294	192	1,080	702	3,618	3,750	T. of O. 355, series D.	
12	Total, operations, repair, etc.					6	259	265	96		196	159	1,722	1,467	355	1,679	1,502	7,176	7,441		
13	Division Motor Transport officers.	7				7	14	21										42	83		
14	Division Motor Transport com-panies.	35				7	35	35			7	35	245	595	70	175	420	1,540	1,575		
15	Division motor-cycle companies.	7					7	7				7	35	7	7	196		262	269		
16	Division headquarters motor commands.	14					28	28					14	28		14		84	112		
17	Attached to division sanitary train.	7					14	14											14		T. of O. 28, series A.
18	Total, divisions.					7	98	105			35	42	301	637	77	392	434	1,918	2,028	Amended letter A. G. O., May 26, 1919.	
19	Aggregate.		1	6	12	33	427	479	106	14	313	205	2,161	2,192	460	2,102	2,097	9,680	10,129		
20	Division Motor Transport com-panies (line 20 to be added if 2 divisions are to be maximum strength).	10					10	10										440	450		
21	Grand total.		1	6	12	33	437	489	106	14	313	215	2,231	2,362	480	2,152	2,217	10,000	10,579		

¹ A tentative project compiled by the direction of the chief, Motor Transport Corps.

The CHAIRMAN. How many civilian employees have you in the Motor Transport Corps?

Gen. DRAKE. On March 31 we had 4,300, including the clerical force and laborers.

The CHAIRMAN. Clerks, messengers, and laborers?

Gen. DRAKE. Laborers and chauffeurs at arsenals and depots where enlisted men are not furnished.

The CHAIRMAN. Can you tell us about how much the civilian employees were receiving by way of pay?

Gen. DRAKE. They vary from about \$1,200 a year up to \$2,000.

The CHAIRMAN. Do they work alongside the enlisted men?

Gen. DRAKE. They are used now as instructors for enlisted men. They actually perform production functions, but are at the same time training our enlisted men to do their work.

Mr. MCKENZIE. Have you not any officers who can do that?

Gen. DRAKE. We have not many technical officers left. The technical officers who were familiar with this class of work have all left the service to devote themselves to civil pursuits?

The CHAIRMAN. Most of them were civilians, who went into the Army for the emergency?

Gen. DRAKE. A great many of them.

The CHAIRMAN. A great majority of them; is that not the fact? You had comparatively few Regular Army officers?

Gen. DRAKE. Practically no Regular Army officers in the Motor Transport Corps during the war; probably not over 50.

The CHAIRMAN. So when these men went back to civilian pursuits they simply returned to that status which they held before the opening of hostilities by us in the World War?

Gen. DRAKE. Yes, sir.

Mr. GREENE. How are you going to solve that problem with the reorganization of the Army? For instance, it will be a matter of fact and expectation that prior to the war the Regular Army officers were only experienced in the operations of such vehicles as the transportation of the Army in the sense required, with incidental knowledge which they might get out of the experience with that, but not themselves expert instructors, because they were essentially military men. If we undertake this great automotive resource of the Army by its enlargement and reorganization, and are going to carry it on through these schools, how are you going to get at a policy that will enable you to have in the commissioned personnel some men who can act as instructors because they are themselves technicians in this particular industry and men of experience in it as well as being military men.

Gen. DRAKE. We do that by means of the officers' schools. Officers are sent to a school at Camp Holabird, and they do the actual work. They appear every morning in overalls and do the same work that any mechanic does, acquiring the information by actually doing the work.

Mr. GREENE. That is under process now?

Gen. DRAKE. Yes, sir.

Mr. GREENE. And it is your policy to continue that until your people in charge of automotive transportation in the Army; that is, the commissioned personnel and to some degrees the enlisted personnel, will themselves become what might be loosely termed tech-

nicians in the craft and will be able to be instructors as time goes on, as well as practical experts through experience?

Gen. DRAKE. Yes, sir; that is the idea. That is to be done to make the service operate efficiently.

Mr. GREENE. So you contemplate in the take-in of the time the reorganization act may go into effect, some men from civil life who have had this experience in that capacity in civil life, who now want to exchange their position in civil life for an Army commission permanently?

Gen. DRAKE. Yes, sir; we hope to do that.

Mr. McKENZIE. About how many chauffeurs do you employ, and what do you pay them?

Gen. DRAKE. I have not got the civilian personnel classified as to who are chauffeurs or mechanics, but the total number is 4,300.

Mr. McKENZIE. Do you know the salary they are paid?

Gen. DRAKE. It varies from \$900 to \$1,500.

The CHAIRMAN. I understood you to say you only employ civilian chauffeurs at those stations where there are no enlisted men available to act as chauffeurs?

Gen. DRAKE. Yes, sir; that is the only place.

Mr. GREENE. What is your experience with that? Do you find it leads to discontent and uneasiness on the part of the enlisted personnel to find themselves side by side with men from civil life getting higher pay and enjoying the privileges of liberty, and with less responsibility and obligation?

Gen. DRAKE. We did find that condition for a while, but I think it is changing very rapidly, so that now the enlisted man is actually contented with his work. They all enjoy the work with the Motor Transport Corps, and they realize that the knowledge they are getting is going to benefit them later in life because of the opportunities that will be accorded them; so they are very well satisfied.

Mr. GREENE. Does it present this rather sad commentary on the present department policy that you have now in school or camp a certain limited number of enlisted men working under all the obligations of an Army enlistment and this limited pay right along beside your civilian employees working at a higher rate of pay and with greater privileges, doing the same work, and the enlisted man's interest in the Army consists in hurrying up to get through with the short-time enlistment so he can go out and be rehired by the Army as a civilian?

Gen. DRAKE. Not to be rehired, because our policy is not to rehire them, but to let them find their way into civil life, and eventually to have nobody in the Motor Transport Corps except commissioned officers and enlisted men.

Mr. McKENZIE. The thing that occurred to me was the rather anomalous situation in the Motor Transport Corps. It seems to me that the corps should be limited to the number of men who could handle the machines. If you have not enough enlisted men, then get a larger corps, but not have a Motor Transport Corps, and then have a corps of civilians to do the driving.

The CHAIRMAN. There would be a very small number of civilians employed.

Gen. DRAKE. It will be very, very small in proportion.

I would like to call attention to the fact that already a number of our graduates have gone into civil life and received from \$35 to \$40 a week, and not only that, but the officers who are getting that education are leaving the service because they can obtain so much more pay in civil life, and it is hard to hold them.

The CHAIRMAN. Has it not been your experience that when men have had that education in the Army and the country gets into trouble, that the men who have had the training and education the Army has given them are ready to come to the colors in the event of trouble?

Gen. DRAKE. A majority of them will.

Mr. CALDWELL. And in the meantime the income tax on the increased earnings will pay the expense of the training of the men.

The CHAIRMAN. We are very much obliged to you, General.

STATEMENT OF BRIG. GEN. FRANK T. HINES, CHIEF, TRANSPORTATION SERVICE.

The CHAIRMAN. Gen. Hines, we will be glad to hear you now in connection with the item on page 27 of the tentative draft of the bill for the transportation of the Army and its supplies.

Before you came in Gen. Lord submitted the figures tentatively for the appropriations under this item, based on an army of 300,000 men, and also on a strength of 225,000 men, a strength of 200,000 men, and a strength of 175,000 men. So I imagine you are perfectly familiar with those figures?

Gen. HINES. Mr. Chairman, at the start, in order to give the committee a birds-eye view of the situation, I have summarized these various appropriations, and with your permission I would like to make a general statement, and then if the committee desires further details, I am prepared to go into the last detail.

The committee will recall, I appeared before them in May of last year. At that time we were at the height of the return movement of our troops. The committee will probably recall also that of our own accord we recommended a reduction of something like \$129,000,000, in our estimates, based on the assumption that we would return the troops rapidly from abroad. I wish to state to the committee that we not only succeeded in returning the troops quickly, equal to our expectations at that time, but we did a little better, so that in addition to the saving made on the appropriation we succeeded in saving something over \$100,000,000 more on that appropriation. In order that the committee may have some idea of the items for which I am asking appropriations, I would like to state that they cover all transportation pertaining to water, rail, and animal-drawn. In other words, all transportation for the Army, except motor transportation.

In 1919, exclusive of motor transportation the appropriation was \$1,854,150,341.47, and for 1920 the appropriation was \$201,684,232.69. We have estimated, Mr. Chairman, for an army of 300,000 men, that for the items of transportation which I have covered, we should have \$57,288,472.60.

I wish to say, Mr. Chairman, that in reaching that amount we have struck out all construction, and that the estimate is pared down to a minimum. We are rapidly approaching the peace basis, but there

are still some items in the appropriation for which we have to ask for funds, that are still chargeable to the war. I would like to take up those items because a comparison of the other items with the statement which I will introduce into the record will show that where they differ from the pre-war costs they are due to either increase in labor costs or material costs, and they compare favorably with the estimates of 1916.

The CHAIRMAN. Such a segregation of the amounts would be very valuable to the committee.

Gen. HINES. I have that statement here and I will ask that it be put in the record.

(The statement referred to is as follows:)

Statement showing portion of estimate for Transportation Service attributable to war and system of enlistments.

Item No.	Item name.	For Army of 175,000.	For Army of 200,000.	For Army of 225,000.	Attributable to war and present system of one-year enlistments.	
					War.	One-year enlistments.
0126.106.....	Rail transportation:	\$65,100.00	\$74,400.00	\$83,700.00		
0119.106.....	Civilian employees, reimbursement of travel expenses.....					
	Rail transportation employees, including freight clerks, checkers, locomotive engineers, locomotive firemen, trainmen, yardmasters, switchmen, railroad laborers, hire of.....	675,000.00	755,000.00	840,000.00		
0120.106.....	Dock laborers, hire of.....	50,000.00	60,000.00	70,000.00		
0121.106.....	Miscellaneous laborers for rail transportation.....	75,000.00	85,000.00	90,000.00		
0127.106.....	Reimbursement of travel expenses of newly appointed cadets in the United States Military Academy.....	10,000.00	10,000.00	10,000.00		
0128.106.....	Travel allowance of discharged officers and enlisted men.....	4,065,000.00	4,065,000.00	4,065,000.00	\$2,000,000.00	
1122.106.....	Railroad equipment, purchase of.....	25,000.00	25,000.00	25,000.00		
1123.106.....	Railroad equipment, operation, repair, and maintenance of.....	2,000,000.00	2,500,000.00	3,042,000.00	1,500,000.00	
1801.106.....	Troops changing station, transportation of.....	2,334,500.00	2,695,000.00	3,001,500.00		\$500,000.00
1802.106.....	Applicants for enlistment and recruits, transportation of.....	1,674,000.00	2,513,000.00	3,348,000.00		1,000,000.00
1803.106.....	Recruiting parties, transportation of.....	45,500.00	52,000.00	58,500.00		
1804.106.....	Impediments of organization and property accompanying troops changing stations, transportation of.....	376,962.00	430,848.00	484,704.00		
1805.106.....	Public animals, with troops changing stations, transportation of.....	286,440.00	327,360.00	368,280.00		
1806.106.....	Horses of officers, changing stations, transportation of.....	86,968.00	99,380.00	111,905.00		
1807.106.....	Baggage of officers, transportation of.....	251,272.00	287,168.00	323,064.00		
1808.106.....	Baggage of enlisted men, transportation of.....	41,724.00	47,776.00	53,748.00		
1809.106.....	Baggage of civilian employees, transportation of.....	9,506.00	10,864.00	12,222.00		
1810.106.....	Discharge of civilian employees, transportation of.....	383,880.00	383,880.00	383,880.00	300,000.00	
1811.106.....	Agents and employees of the Army, transportation of.....	216,624.00	247,456.00	278,388.00		
1812.106.....	Street car tickets, tolls and ferrages, payment of.....	180,000.00	175,000.00	200,000.00		
1901.106.....	Clothing and equipment, transportation of.....	407,066.00	465,240.00	523,395.00		90,000.00
1902.106.....	Other quartermaster stores, transportation of.....	1,696,188.00	1,895,500.00	2,090,812.00		
1903.106.....	Subsistence stores, transportation of.....	661,000.00	744,000.00	827,000.00		
1904.106.....	Cavalry, Artillery, Engineers, Signal Corps, horses from place of purchase, transportation of.....	108,260.00	123,760.00	139,260.00		
1905.106.....	Draft and pack animals from place of purchase, transportation of.....	31,938.00	36,500.00	41,062.00		
1906.106.....	Horse equipment, transportation of.....	17,880.00	20,400.00	22,950.00		
1907.106.....	Ordnance, ordnance stores, and small arms, transportation of.....	5,000,000.00	5,000,000.00	5,000,000.00	4,000,000.00	
1908.106.....	Signal Corps stores, transportation of.....	117,583.00	134,380.00	151,177.00		
1909.106.....	Engineer Department stores, transportation of.....	97,510.00	111,440.00	125,370.00		
1910.106.....	Medical Department stores, transportation of.....	90,038.00	102,900.00	115,762.00		
1911.106.....	Aviation Service stores, transportation of.....	246,666.00	433,334.00	525,000.00		
1912.106.....	Motor Transport Corps stores, transportation of.....	303,333.00	333,334.00	375,000.00		
1913.106.....	Construction Division stores, transportation of.....	133,333.00	166,667.00	200,000.00		
1914.106.....						

1915.106	Tank Corps stores, transportation of.....	43,730.00	50,000.00	60,000.00	.....
1916.106	Chemical Warfare Service stores, transportation of.....	10,000.00	12,500.00	15,000.00	.....
1917.106	Transportation of funds of the Army.....	12,333.00	14,100.00	15,862.00	.....
1918.106	Dryage, cartage, and hauling at posts.....	23,333.00	26,667.00	30,000.00	.....
1919.106	Dryage, cartage, and hauling at depots.....	19,444.00	22,222.00	25,000.00	.....
1920.106	Dryage, cartage, and hauling at arsenals and armories.....	9,333.00	10,667.00	12,000.00	.....
1921.106	Dryage, cartage, and hauling in field.....	3,889.00	4,444.00	5,000.00	.....
1922.106	Packing and crating.....	449,750.00	514,000.00	578,250.00	.....
1923.106	Total rail transportation.....	22,327,047.00	25,002,187.00	27,738,208.00	7,800,000.00
0122.106	Water transportation, Army transports:	4,078,636.50	4,078,636.50	4,078,636.50	1,989,795.00
1701.106	Wages of employees.....	7,869,725.00	7,869,725.00	7,869,725.00	3,916,450.00
1702.106	Fuel for owned Army transports.....	624,870.00	624,870.00	624,870.00	324,000.00
1703.106	Deck, engine, and steward's supplies, owned Army transports.....	39,640.00	39,640.00	39,640.00	22,000.00
1704.106	Water for owned Army transports.....	96,730.00	96,730.00	96,730.00	41,160.00
1705.106	Laundry for owned Army transports.....	71,810.00	71,810.00	71,810.00	33,400.00
1706.106	Pilotage for owned Army transports.....	343,000.00	343,000.00	343,000.00	223,130.00
1707.106	Stewarding for owned Army transports.....	1,675.00	1,675.00	1,675.00	500.00
1708.106	Removing ashes, owned Army transports.....	78,100.00	78,100.00	78,100.00	40,800.00
1709.106	Painting and cleaning, owned Army transports.....	471,000.00	471,000.00	471,000.00	230,000.00
1710.106	Miscellaneous expenses, owned Army transports.....	25,500.00	25,500.00	25,500.00	23,500.00
1711.106	Towage, owned Army transports.....	1,464,050.00	1,464,050.00	1,464,050.00	781,000.00
1712.106	Repairs, owned Army transports.....	15,154,736.50	15,154,736.50	15,154,736.50	7,625,735.00
1719.106	River and harbor boats:	265,975.00	265,975.00	265,975.00	83,550.00
1721.106	Fuel.....	4,375.00	4,375.00	4,375.00	1,650.00
1722.106	Water.....	357,500.00	357,500.00	357,500.00	115,000.00
1723.106	Miscellaneous expenses.....	1,212,331.00	1,212,331.00	1,212,331.00	450,000.00
0124.106	Wages of employees.....	103,450.00	103,450.00	103,450.00	40,425.00
1720.106	Supplies.....	228,450.00	228,450.00	228,450.00	80,000.00
1718.106	Repairs.....	50,000.00	50,000.00	50,000.00	.....
1722.106	Hire of substitute boats.....	2,222,081.00	2,222,081.00	2,222,081.00	770,625.00
0125.106 and 1724.106	Coast Artillery boats.....	3,109,592.64	3,109,592.64	3,109,592.64	.....
to 1730.106.	Wharfage, river and harbor and Coast Artillery boats.....	70,662.50	70,662.50	70,662.50	.....
1712.106	Total water transportation.....	20,557,072.64	20,557,072.64	20,557,072.64	8,396,360.00
0115.106, 0116.106,	Animal-drawn transportation.....	2,498,739.96	2,498,739.96	2,498,739.96	.....
1501.106, 1507.106	Total.....	45,382,859.60	48,067,999.60	50,794,021.60	16,196,360.00
to 1512.106, inclu-	sive.	.....	.....	.....	1,550,000.00

Gen. HINES. The items which are still chargeable to the war are these. The first item is that relating to travel allowance of discharged officers and enlisted men, and as near as we can estimate, the amount still chargeable to the war, due to the readjustment of a number of men who are being sent to the reserve, etc., amounts to approximately \$2,000,000.

The next item is for the transportation of troops changing station, of which we believe \$1,500,000 will be chargeable to the unusual conditions of readjustment.

The CHAIRMAN. It is practically a war expenditure.

Gen. HINES. Still a war expenditure. We have another item of \$500,000 that is really due to the one-year enlistment. In other words, these men enlist for a short period and go out next year, and we have a turnover which necessarily will require more funds to transport these men on discharge. In connection with that I might say the policy of the War Department, as I understand it, is not to favor the one-year enlistment for that very reason, it increases the cost of the Military Establishment. We have a similar instance in the case of the transportation of applicants for enlistment and recruits, for which the amount of \$1,000,000 may be charged properly to the short enlistment period.

The CHAIRMAN. Can you kindly elaborate that statement? You say it is chargeable to the short enlistment period. I thought you stated immediately before that that \$500,000 was due to the short enlistment period.

Gen. HINES. That was another item, in regard to the transportation of troops changing stations. I did not intend to imply that that was chargeable to the short enlistment. That is due more to the readjustment of troops in the various camps.

Now, the item of \$1,000,000 for the transportation of applicants for enlistment and recruits is due to the present system of one-year enlistments, to cover the transportation of applicants for enlistment and recruits from the place of application to the place of enlistment and return therefrom. It is simply this, if the Army enlists a man for one year, he then begins another term of enlistment, and the expense incident thereto, against a three-year period, we would have in the next year a certain percentage more men, almost three times as many if they all start at the same time who would go out, than we would have with the three-year enlistment.

The next item chargeable really to the war is for the transportation of dishonorably discharged and insane persons, the amounts for which is \$300,000. In other words, a larger number of that class of people will have to be discharged and transportation furnished that would not normally take place in peace times.

Another item, amounting to approximately \$4,000,000, which can be charged to war expenditures is the transportation required by the Ordnance Department, the total item amounting to \$5,000,000. \$4,000,000 of which is chargeable to the unusual conditions in the movement of explosives at the seaboard and near cities to permanent storage depots. In connection with this, as I understand it, the Ordnance Department obtained funds from Congress to establish these depots. This item comes now in the moving of these explosives from their seaboard places to inland points.

The CHAIRMAN. That is altogether, you might say, a war expenditure?

Gen. HINES. Exactly. So, Mr. Chairman, of the total under rail transportation of \$27,738,209, \$7,800,000 may be still chargeable to the war and \$1,550,000 to conditions under which we are enlisting men and the readjustment of the troops.

Under water transportation the total items, exclusive of river and harbor boats, of the appropriation asked for is \$15,154,736.50. Of that amount we feel that \$7,625,735 is still a war expenditure, primarily accounted for by having troops in Europe, necessitating the supplying of such troops and the maintenance of the Atlantic Transport fleet, which normally would practically disappear, if the troops were withdrawn from Europe.

The CHAIRMAN. About how much does it cost on an average, for a round trip for an army transport to one of the European ports?

Gen. HINES. Of course, that depends entirely on the size and speed of the transport.

The CHAIRMAN. Naturally.

Gen. HINES. Normally, these vessels cost between \$1,750 and \$3,000 a day. If they are operated efficiently and the time of running cut down, the home port charges will be reduced to about half of that amount in port. So it would depend entirely on the number of days required for the round trip. These vessels take usually between New York and Antwerp, which is our main port of supply, on an average of eight days, so \$50,000 would cover the normal round trip of a vessel.

The CHAIRMAN. Of course, these vessels at the present time are carrying supplies principally for transmission to the Rhine area?

Gen. HINES. That is correct, and in connection with that I would like to state to the committee that the entire cost of the operation of the fleet is billed to the German Government.

The CHAIRMAN. How much money has Germany paid on that cost up to the present time?

Gen. HINES. We have had no report, so far as my office is concerned, although bills have been presented abroad and payments might have been made without my knowing it.

The CHAIRMAN. Will you kindly find out for this committee whether Germany has paid a single dollar on account of the pay of the soldiers who are in the occupied areas, or in the plebiscitary areas of Germany, and whether she has paid any money at all on account of the transport service between this country and European ports for the purpose of furnishing supplies or troops to take the place of those who are on the other side in German territory?

Gen. HINES. Mr. Chairman, I will endeavor to get that information for the committee and put it in the hearing.

The CHAIRMAN. We are trying to conclude these hearings in a very short time, and that information, in order to be available to the committee, ought to be furnished within a day or two. I presume the officials of the War Department would know, without much investigation, just what has been paid.

Gen. HINES. If it is available, I am sure I can furnish it within that time.

In order that your committee might have full and detailed information, a cable was sent Gen. Allen calling for a report of the status of payments up to the present time, and under date of April 4, 1920, Gen. Allen replied as follows:

"Reference W 199, German Government has paid in marks as follows: December, 1918, and January and February, 1919, 109 million; March, 1919, 19 million; April, 1919, 80 million; May, 1919, 100 million; February, 1920, 50 million; March, 1920, 75 million; total, 433 million. Total has been credited to appropriation pay of the Army. All has been used for partial payment troops. No payment has been made for transportation service in connection with troops. Transportation has been furnished in kind in Germany. Claims for damages paid directly by German Government after investigation by these headquarters.

"ALLEN."

Mr. CALDWELL. This estimate for water transportation for the troops on the Rhine presupposes that they will stay there for the next fiscal year beginning July 1, 1920?

Gen. HINES. It does.

Mr. CALDWELL. If we pass this resolution which has been proposed within the next few days, declaring that the war is at an end, you will not need that, will you?

Gen. HINES. That will depend entirely on how soon they start a movement back. I will assure you when we get orders to get the troops home they will come home rapidly.

Mr. CALDWELL. How many have we there now?

Gen. HINES. Approximately 17,000 men.

Mr. CALDWELL. You can bring them home on one boat?

Gen. HINES. If we could get the *Leviathan* into Antwerp we could bring 10,000 of them on that ship. With the fleet I have in the Atlantic at this time, its total capacity is approximately 13,500 men.

The CHAIRMAN. The figures I had from the War Department in regard to the number of troops in Germany, a week ago or thereabouts, indicates that we had about 18,300 officers and men over there.

Gen. HINES. I have a report, Mr. Chairman, dated March 27, which shows that of the troops in Germany there are 726 officers and 16,756 enlisted men, making a total of 17,482.

The CHAIRMAN. That is a reduction from the report of the previous week.

Gen. HINES. In addition, Mr. Chairman, I would like to mention to the committee that the transports in the service now are also, complying with the resolution of Congress, returning some 10,000 Polish-Americans from Danzig. The first vessel left a few days ago and that movement will not last very long.

The CHAIRMAN. Let me get a little more data on this transport service across the Atlantic. If those troops now in Germany were to return to this country there would be no necessity for a trans-Atlantic transport service?

Gen. HINES. No, sir; we would contemplate only maintaining, Mr. Chairman, a transport service to the Canal Zone, to maintain the garrisons there, and a very few transports in reserve for emergency use. In other words, I am sure the committee appreciates that if it is necessary to transport men we should have available transports especially fitted for at least an initial movement. The policy and plan which we are following contemplates only maintaining for all services, Pacific, Atlantic, and Canal Zone, 11 permanent transports, 6 of those being in the Pacific, with possibly an additional 1 as reserve.

The others would be operated from New Orleans to the Canal Zone and from New York to the Canal Zone. Two new vessels are building for the service, to replace two old transports, and in this legislation

I am asking the committee to authorize the War Department to dispose of the old transports as rapidly as the new ones come in. I have a statement which I would like to put in the record, which will show that if the War Department does that we will be able to dispose of the old transports at a greater price than we originally paid for them.

One important thing in connection with that is, that these vessels have reached the point now where to continue them in the service would make the cost of upkeep excessive. Only yesterday I received from New York a report on the *Kilpatrick*, one of the old transports.

The CHAIRMAN. That is one of the Spanish-American war heroes?

Gen. HINES. Yes, sir. She was built in 1890, and is really in such condition that she should not be operated as a passenger transport longer. So far as that vessel is concerned, if we repair her so she can safely be maintained in the trans-Atlantic service, it would cost the Government \$100,000 for the repairs, and I have suspended making repairs, hoping to get this legislation, as the first new transport will come out in April, and so avoid that \$100,000 expense and dispose of the *Kilpatrick* at a price offered of \$1,049,000, as against \$660,000 that we originally paid for her. Of course, unless this is done quickly, we will not have the advantage in prices, because the market on ships is decreasing.

The CHAIRMAN. I was going to say that in order to realize the high prices that prevail to-day those sales will have to be consummated in a very short time.

Gen. HINES. There is a provision in this bill which will provide for that, and if it is agreed to I am prepared to carry that policy out. It has the approval of the Secretary of War, and in the statement I will hand to the reporter it will show all the details in reference to the ships—the purchase price, the price offered, and the revenue to the Government—which would amount to approximately \$3,874,000 on all of them.

The CHAIRMAN. Besides the 11 ships you speak of retaining permanently, how many transports have you now in the service? Or, rather, tell us what the total number of transports is at this time?

Gen. HINES. Before I proceed with that I would like to finish this statement, in order to get it in the proper place.

The CHAIRMAN. Very well.

Gen. HINES. Under the last item, river and harbor boats used in our coast defense primarily, certain expenses included are still chargeable to war purposes; so that taking the sum total for all appropriations, out of the total we are asking for really \$16,196,360 is chargeable to war conditions.

The CHAIRMAN. Out of the total amount you want?

Gen. HINES. Yes, sir. In other words, when we get through with this year, unless I am very much disappointed, the estimates for the peace basis would be reduced by that amount.

The CHAIRMAN. To go back to the question I asked you before, how many vessels have you in the trans-Atlantic service plying between United States ports and European ports?

Gen. HINES. We have in the trans-Atlantic service operating between New York and Antwerp, and temporarily to Dantzic—

The CHAIRMAN (interposing). The same transports that go to Antwerp also go to Dantzic, so there is no increase in the number of vessels.

Gen. HINES. There is no increase there. I have 10 vessels. In the Panama service I have 2, and in the Pacific service I have 7. In connection with the trans-Atlantic service there is one matter which should come in here in connection with the cost to the Government. We are also engaged in returning approximately 50,000 bodies of American dead from France, and we feel that our transport service should handle that, and we are handling it as rapidly as the bodies become available.

Mr. CALDWELL. Have any of them been brought back yet?

Gen. HINES. Yes, sir. There is a vessel on the way now with 80 that were taken up in England, and a vessel is due at Brest to-day that should pick up two or three hundred. They said they would have 100 ready on the 5th, but I imagine that before she sails they will have two or three hundred.

The CHAIRMAN. I think you brought back 26 a month or so ago?

Gen. HINES. Yes, sir. We have brought back small numbers, but the largest shipment was 211 from Russia. The others will come in now very rapidly. The following table shows the number of American dead returned:

Statement showing return of American dead from abroad.

(a) Died at sea, returned to United States:	
Hoboken.....	¹ 1,031
Newport News.....	164
Boston.....	2
Charleston.....	2
	<hr/> 1,199
(b) From North Russia.....	² 115
(c) Through Graves Registration Service (<i>Northern Pacific</i>).....	18
(d) Miscellaneous.....	9
	<hr/> 1,341
Total not officers or enlisted men.....	17
	<hr/> 1,324
Total Army.....	
Now en route (<i>Nansemond</i>).....	87

I will also introduce a statement, Mr. Chairman, showing the entire fleet for the Pacific and the Atlantic, with the details connected with it.

(The statement referred to is as follows:)

¹ Includes 1 nurse Nov. 18, and one civilian Aug. 19.

² Lake Draga includes 10 Navy, 4 of whom were put on at Brest.

³ Four officers, one Congressman, four civilians.

General information concerning transports.

Name of ship.	Dead- weight tonnage.	Total crew.	Troop capacity.		Cargo capacity with troops.	Speed, knots.	Num- ber of screws.	Oil or coal burn- ing.	Built.	Purchase price.	Price offered.	Differ- ence.
			Officers.	Men.								
Sherman.....	5,227	190	216	1,799	1,633	10	2	Coal.....	1893	\$560,000	\$1,099,300	\$409,300
Sheridan.....	5,291	188	213	1,797	1,638	10	2	do.....	1892	660,000	1,049,505	389,505
Thomas.....	5,280	191	280	1,960	1,650	10	2	do.....	1894	660,000	1,072,260	412,260
Logan.....	5,327	184	209	1,778	1,606	10	2	do.....	1892	660,000	1,049,320	389,320
Burdett.....	5,000	174	64	988	1,500	10	1	do.....	1890	350,000	932,400	582,400
Kilpatrick.....	4,526	146	62	983	1,751	10	1	do.....	1890	350,000	932,400	582,400
Cook.....	5,318	150	64	1,263	2,500	10	1	do.....	1893	350,000	763,310	523,310
Warren.....	5,341	136	48	1,272	2,909	8.5	1	do.....	1898	200,000	784,955	584,955
Mercury.....	10,350	268	100	2,572	2,037	12.5	2	do.....	1896	.....	.....	.....
Antigon.....	11,000	245	128	2,793	2,714	12.75	2	do.....	1900	.....	.....	.....
Patagonia.....	10,550	262	259	1,877	1,500	14.6	2	do.....	1900	.....	.....	.....
Princess Matilda.....	10,300	262	155	3,207	1,275	14.5	2	do.....	1899	.....	.....	.....
Powhatan.....	9,980	262	157	3,717	1,569	13	2	do.....	1900	.....	.....	.....
Great Northern.....	6,000	228	165	2,941	3,000	21	2	Oil.....	1914	.....	.....	.....
South Bend.....	10,000	75	40	2,211	.....	.....	2	do.....	1919	.....	.....	.....
Dir.....	9,939	85	(1)	.....	.....	10	1	Coal.....	1892	.....	.....	.....
Burridge.....	1,428	97	(1)	2,316	1,381	9	1	do.....	1892	.....	.....	.....
Northern Pacific.....	6,000	260	141	2,316	2,500	20	2	do.....	1915	.....	.....	.....
Santa Lenora.....	5,325	124	81	1,377	2,000	13	2	do.....	1918	.....	.....	.....
Marica.....	12,100	90	41	(Cargo.)	9,075	14	2	do.....	1919	.....	.....	.....
Lebanon.....	1,191	90	(1)	.....	1,191	9	1	Coal.....	1878	.....	.....	.....
Wignore.....	1,500	32	(5)	358	6,500	6	1	do.....	1913	.....	.....	.....
Merritt.....	1,800	118	(5)	.....	.....	11	1	do.....	1912	.....	.....	.....
Total.....	148,776	3,803	2,323	33,309	50,019	273.85	37	.....	.....	3,780,000	7,654,560	3,874,560
Average.....	6,468.5	165	101	1,448	2,175	11.9	(9)	(7)	(*)	472,500	966,820	484,320
Hog Island ships.....	9,500	130	150	2,000	5,000	14.5	1	Oil.....	.....	.....	.....	.....

* 6 oil, 17 coal.
* 20 years 7 months.

* Coal steamer.
* 14 two screws, 9 one screw.

* Cable steamer.
* No troops.

* 127 animals.
* 5,769 W. O. A.

Gen. HINES. In connection with the operation of the transport fleet, I would like to call the committee's attention to a service which we have rendered. In transporting supplies for the French Government, of any other service, like that for the Engineer Corps in the sale or equipment abroad, for the Grain Corporation in the sale of food, during the year 1919 the vessels operating in the Atlantic, in addition to taking care of the supply of our own troops, and of course, going eastward in the early part of 1919, when we were returning troops, in the transport of cargo and passengers for these various services, we actually performed service amounting to \$37,012,259.28, and for 1920 it amounted to \$9,952,956.91. So that the total amount of service rendered was \$47,876,228.07. We have actually collected and deposited in the Treasury \$29,106,537.94, and there is still outstanding to be paid \$18,769,690.13. In other words, the transport service has earned in 1919 and 1920 approximately the amount of money I am asking for the next year. I have a statement which I will put in the record, if you desire it. The larger part of that amount was earned in transporting locomotives and cars for the French Government, which were sold to France. Of course, it was a very good thing that we had an opportunity to transport this material, or otherwise our ships would have gone to the ports abroad, for the return of our men, without anything in them, and in that way we have saved to the Government about \$47,000,000.

The CHAIRMAN. You can insert that statement in the record.

(The statement referred to is as follows:)

Statement of bills presented for transportation of passengers up to March 31, 1920.

Organization.	Amount billed.	Amount received.	Balance due.
American Library Association.....	\$2,310.00	\$2,310.00	
Department of Agriculture.....	473.75		\$473.75
Allen Property Custodian.....	110.00	110.00	
Associated Press.....	528.92		528.92
Belgian Government.....	6,050.00	550.00	5,500.00
British ministry of shipping.....	8,694.77	3,914.00	4,780.77
Department of Commerce.....	880.00		880.00
Czecho-Slovak Government.....	168,379.62	5,420.00	162,959.62
Department of Commerce.....	2,695.00		2,695.00
Committee on Training Camp Activities.....	110.00		110.00
Council of National Defense.....	110.00		110.00
Canadian Government.....	33.00		33.00
United States Chamber of Commerce.....	5,610.00	5,610.00	
Danish Legation.....	280.00	280.00	
Federal Board for Vocational Education.....	528.91		528.91
French Government.....	81,318.38	8,334.00	72,984.38
United States Grain Corporation.....	8,183.75	8,183.75	
Italian Government.....	18,525.84	18,525.84	
Department of the Interior.....	880.00		880.00
Jewish Welfare Board.....	11,660.00		11,660.00
Department of Justice.....	330.00	220.00	110.00
Knights of Columbus.....	6,930.00	4,640.00	2,290.00
Labor Department.....	4,757.24	220.00	4,537.24
Marine Corps.....	260.00		260.00
Navy Department.....	147,048.28	1,385.00	145,663.28
Panama Railroad Co.....	240.00	240.00	
Post Office.....	1,100.00		1,100.00
United States Railroad Administration.....	110.00		110.00
Romanian Government.....	440.00	110.00	330.00
Russian Government.....	190.00	190.00	
Russian railway service.....	1,995.00		1,995.00
Swiss legation.....	64,800.00	64,800.00	
Do.....	97,070.00		97,070.00
Salvation Army.....	8,470.00	4,400.00	4,070.00
Soldiers and Sailors Club.....	110.00		110.00
Treasury Department.....	176.30	176.30	
Do.....	5,701.33		5,701.33

ARMY APPROPRIATION BILL, 1921.

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Statement of bills presented for transportation of passengers up to March 31, 1920—
Continued.

Organisation.	Amount billed.	Amount received.	Balance due.
State Department.....	\$47,542.14	\$3,178.75	\$44,363.39
Panama Canal.....	1,800.00	400.00	1,400.00
United States Shipping Board.....	32,751.00	32,265.75	485.25
War Trade Board.....	616.30	.....	616.30
Y. W. C. A.....	10,181.25	6,991.25	3,190.00
Council of National Defense.....	4,846.10	.....	4,846.10
War Finance Corporation.....	220.00	220.00	.....
Y. M. C. A.....	163,575.00	.....	163,575.00
Training Camp Activities.....	440.00	.....	440.00
Totals.....	919,011.88	172,874.64	746,137.24

ARMY APPROPRIATION BILL, 1921.

Statement showing credits to transportation service for fiscal years 1919 and 1920.
FISCAL YEAR 1919.

Date rendered.	Against whom.	Service rendered.	Amount.	Amount paid.	Still due.	Remarks.
Jan. 6, 1919	British ministry of shipping.	Transportation, 15 officers and 38 noncommissioned officers.	\$3,089.00		\$3,089.00	
Feb. 12, 1919	War Trade Board, United States Russian Bureau.	Loading and unloading supplies from vessels at San Francisco.	7,832.46	\$7,832.46		
Do.	Czecho-Slovak National Council.	Stevedoring.	1,128.56	1,128.56		
May 27, 1919	do.	Transportation of 6 officers and 94 men from Vladivostok to San Francisco.	5,420.00	5,420.00		
June —, 1919	War Trade Board, United States Russian Bureau.	Operation of chartered ships.	765,025.19	765,025.19		War Department refunded \$194,788.91.
June 5, 1919	do.	Loading and unloading supplies.	33.35	33.35		
June 27, 1919	Czecho-Slovak National Council.	Transportation of supplies.	66,042.90	66,042.90		
Mar. 24, 1919	French high commission.	do.	871.20	871.20		
Mar. 6, 1919	do.	Transportation of railroad equipment.	25,000,000.00	25,000,000.00		Settled by general agreement between Liquidation Commission and French Government, Nov. 25, 1919.
July, 1918, to May, 1919.	do.	Transportation of G. cranes.	255,924.91		255,924.91	
Mar. 31, 1919	do.	do.	5,643.75	5,643.75		Do.
Apr. 22, 1919	do.	Transportation of G. cranes during period Nov. 1, 1918, to Apr. 1, 1919.	2,216,397.90	2,216,397.90		Do.
Apr. 24, 1919	do.	Lighthouse.	378.00	378.00		Paid by check.
Do.	do.	do.	331.00	331.00		Do.
Do.	do.	do.	400.00	400.00		Do.
Do.	do.	do.	508.60	508.60		Do.
Do.	do.	Transportation of supplies.	5,908.60	5,908.60		Do.
Apr. 28, 1919	do.	do.	3,460.00	3,460.00		Settled by general agreement.
May 3, 1919	do.	do.	57,876.38	57,876.38		Do.
Mar. 26, 1919	United States Grain Corporation.	Services rendered due to collision with British vessel.	5,203.04		5,203.04	
Mar. 5, 1919	Northern Relief.	Transportation of supplies.	239,964.00	238,731.44	1,232.56	
Mar. 11, 1919	Southern Relief.	do.	422,459.80		423,469.80	
Do.	do.	do.	347,457.25		347,457.25	
Do.	do.	do.	231,706.87		231,706.87	
Do.	do.	do.	486,536.65		489,536.65	
Do.	do.	do.	363,510.46		363,510.46	
Do.	do.	do.	384,973.47		384,973.47	
Do.	do.	do.	365,490.30		365,490.30	
Do.	do.	do.	629,742.45		629,742.45	
Do.	do.	do.	377,010.22		377,010.22	
Do.	do.	do.	313,183.26		313,183.26	

Do	do	do	466,846.81	466,846.81	
Do	do	do	472,287.35	472,287.35	
Do	do	do	378,879.78	378,879.78	
Do	do	do	254,906.05	254,906.05	
Do	do	do	490,894.85	490,894.85	
Do	do	do	486,243.75	486,243.75	
Do	do	do	250,733.00	250,733.00	
Do	do	do	471,711.67	471,711.67	
Do	do	do	365,523.25	365,523.25	
Do	do	do	565,635.00	565,635.00	
Do	do	do	388,846.22	388,846.22	
Do	do	do	22,046.00	22,046.00	
Do	do	do	4,225.00	4,225.00	
Feb. 12, 1919	United States Shipping Board.	Services of lighters.	37,190,044.19	28,375,975.23	
June 12, 1919	do	Towing.	194,786.91	194,786.91	
	Total		37,004,250.28	28,181,188.32	
	Less refund to War Trade Board.				
	Total		37,004,250.28	28,181,188.32	
FISCAL YEAR 1920, TO MARCH 19.					
Mar. 5, 1920	Agricultural Department.	Transportation of material.	\$76,801.88	\$76,801.88	
Nov. 3, 1919	British ministry of shipping.	Unloading Clan Morrison.	1,650.80	1,650.80	
Dec. 3, 1919	do	Supplies furnished British vessels from July 1, 1917, to May 23, 1919.	4,447,601.31	4,447,601.31	
Jan. 20, 1920	do	Cross-channel services during August and September, 1918.	30,715.19	30,715.19	
Feb. 11, 1920	do	Transportation of freight for British Red Cross.	69.50	69.50	Returned for information as to who requested transportation.
Feb. 18, 1920	do	Pilots and provisions.	157.85	157.85	
July 3, 1919	Czecho-Slovak National Council.	Transfer of material from railroad terminal to ship.	413.49	413.49	
Sept. 5, 1919	Engineer Corps.	Transfer of tug Oribon.	8,500.00	8,500.00	
Sept. 27, 1919	do	Transfer of U. S. A. T. Cumberland.	151,700.00	151,700.00	
Jan. 12, 1920	do	Transfer of bulk cargo Belle Terre.	10,000.00	10,000.00	
Aug. 12, 1919	French high commission.	Transportation of supplies.	123,989.00	123,989.00	
Nov. 12, 1919	do	do	284,688.81	284,688.81	
Dec. 12, 1919	United States Grain Corporation.	Harbor services.	251,912.40	251,912.40	
Feb. 17, 1920	United States Grain Corporation, Northern Relief.	Transportation of supplies.	113.90	113.90	
Nov. 8, 1919	do	do	184,986.00	184,986.00	
Do	do	do	246,337.60	246,337.60	
Do	do	do	371,610.00	371,610.00	
Do	do	do	194,494.80	194,494.80	
Do	do	do	257,445.60	257,445.60	
Do	do	do	262,073.20	262,073.20	
					Held, pending result of conference with Grain Corporation.

Statement showing credits to transportation service for fiscal years 1919 and 1920—Continued.

FISCAL YEAR 1920, TO MARCH 19—Continued.

Date rendered.	Against whom.	Service rendered.	Amount.	Amount paid.	Still due.	Remarks.
Nov. 8, 1919	United States Grain Corporation, Northern Relief.	Transportation of supplies.....	\$240,403.60		\$240,403.60	Held, pending result of conference with Grain Corporation.
Do.....	do.....	do.....	\$269,226.80		269,226.80	Do.
Do.....	do.....	do.....	310,703.20	\$310,703.20		Do.
Feb. 17, 1920	do.....	do.....	275,814.00		275,814.00	Held, pending result of conference.
Nov. 18, 1919	do.....	do.....	247,036.40		247,036.40	Do.
Do.....	do.....	do.....	242,520.80		242,520.80	Do.
Do.....	do.....	do.....	266,530.00		266,530.00	Do.
Do.....	do.....	do.....	280,435.00		280,435.00	Do.
Feb. 17, 1920	do.....	do.....	273,036.80		273,036.80	Do.
Nov. 18, 1919	do.....	do.....	245,802.40		245,802.40	Do.
Feb. 17, 1920	do.....	do.....	314,960.13		314,960.13	Do.
MISCELLANEOUS.						
Dec. 13, 1919	American Red Cross.....	do.....	4,103.68		4,103.68	
Mar. 1, 1920	do.....	do.....	155.46		155.46	
Mar. 4, 1920	Construction Division.....	Lost quartermaster property from city of Savannah.	2,029.81		2,029.81	
Jan. 3, 1920	Cunard Steamship Co.....	Do.....	226.68		226.68	
Oct. 28, 1919	France & Canada Steamship Co.....	Discharging and loading to cars.....	269.70		269.70	
Aug. 29, 1919	Financier Industrial Development Corporation.....	Transportation of supplies.....	22,372.58		22,372.58	
Jan. 27, 1920	Panama Canal.....	Proportionate share of expense incident to voyage of and 14 of Lake Crescent	929.43		929.43	
Feb. 4, 1920	Navy Department.....	Pro rata cost of operation of building, 45 Broadway, New York City.	17,347.94		17,347.94	
Jan. 24, 1920	do.....	Transportation of freight.....	124.25		124.25	
Jan. 9, 1920	do.....	do.....	80.16		80.16	
Jan. 9, 1920	Russian financial attaché.....	Transportation of currency.....	179.50	179.50		
Feb. 11, 1920	do.....	Transportation of freight.....	1,983.00	1,983.00		
Feb. 27, 1920	do.....	do.....	1,043.15	1,043.15		
Nov. 29, 1919	do.....	Transportation of currency.....	462.00	462.00		
Nov. 29, 1919	do.....	Storage space on pier 5, Bush Terminal.	9,210.13	9,210.13		
Nov. 8, 1919	United States Shipping Board.....	Services of tug Sloop.....	1,320.00		1,320.00	
Dec. 1, 1919	do.....	Services of tug Hoke and Craftsman.	4,000.00		4,000.00	
Jan. 8, 1920	do.....	Services of tug Gypsum Prince.....	2,400.00		2,400.00	
Nov. 6, 1919	State Department.....	Transportation of household effects of employees.	100.00		100.00	

Dec. 17, 1919	do.	do.	84.40	.....	84.40
Dec. 18, 1919	do.	do.	308.28	.....	308.28
Jan. 19, 1920	do.	do.	180.00	.....	180.00
Jan. 16, 1920	do.	do.	486.33	.....	486.33
	Post Office Department	Recharging commercial mails at Brest			
	Total		9,952,956.91	752,474.98	9,200,481.93
	RECAPITULATION.				
	Total for 1919		37,004,259.28	28,181,188.32	8,823,070.96
	Total for 1920		9,952,956.91	752,474.98	9,200,481.93
	Troops		919,011.88	172,874.04	746,137.84
	Grand total		47,876,228.07	29,106,537.94	18,769,690.13

The CHAIRMAN. General, will you kindly proceed with your explanation of the items?

Gen. HINES. Mr. Chairman, I would like to put into the record at this point a summary of the various estimates that you mentioned at the commencement of my hearing; that is, for the 299,000 men, and so on down, and to point out in connection with them that in a number of items, particularly those relating to water transportation, they bear no direct relation to the strength of the Army. They are estimated for to perform a certain service. I can best illustrate that by the example I gave this morning of the trans-Atlantic fleet. In other words, as long as we have an army abroad it requires a certain amount of money to operate the fleet. That is really independent of the total strength of the Army.

That is true with some of the other items, particularly those relating to harbor equipment, and those in the harbor defenses connected with the Coast Artillery work.

The CHAIRMAN. In reality, the water transportation system across the Atlantic is a legacy from the war?

Gen. HINES. That is it.

The CHAIRMAN. The entire amount involved?

Gen. HINES. And in the statement which we have introduced into the record that is shown as a complete charge really still against the war.

Mr. McKENZIE. I have been thinking since you testified before you went to lunch about the keeping of the 11 transports in peace times. What use could those be put to other than just going back and forth to the Canal Zone and to the Philippines, and what, if any, real necessity is there for that number, except holding them as reserve transports to be used in case of emergency?

Gen. HINES. We have found during peace—and I have a statement which I will put in the record later showing it—that the transport fleet in its operation by the Government results in a saving to the Government, as compared with the same service obtained from commercial companies.

Take in the Pacific. The saving by the service rendered amounted to about \$2,000,000 a year over the service which could have been rendered, if it had been available, by commercial companies. The difficulty is simply this, that when the Army has to send replacements, new recruits to replace the old, or supplies, we have to send them then, and not when the commercial companies can book them, probably two or three months later. The commercial companies are not anxious to enter into the troop-transportation business, especially at this time, when there is more business than they can take care of, and even in peace times that was so on the Pacific.

Another feature that we should keep in mind is that in the event it is desired to change a complete unit, say from the Canal Zone to a Texas station, it would be practically impossible to move a complete regiment on a commercial ship operating to the Canal Zone, and it can be clearly shown that the transports—I would not say it can be clearly shown on an indefinite number, but I believe on the number we contemplate, that they will make money for the United States.

Mr. McKENZIE. These ships, as I understand it, in peace time, will be a sort of combination transport and cargo-carrying vessel?

Gen. HINES. That is right. The new ships are designed to carry approximately 2,500 troops, and 5,000 tons of cargo. I have advocated before this committee, and a bill has passed the Senate, authorizing the War Department to completely load its transports, if we have vacant space, with any commercial freight or any commercial passengers. My feeling is this, that at this time when we are trying to build up an American merchant marine, vacant space, whether on our ships, or on any other ship, is a crime, and it ought to be filled. If we were permitted to do that, I believe the fleet can be made self-sustaining. In other words, with the revenue derived by charging the same rates that commercial companies would charge for the same class of accommodations, we could nearly make that transport service self-sustaining.

The commercial interests, at the start, were rather opposed to that, but I find now that there is a sentiment in favor of it. I am not sure whether reports have come to the chairman of this committee or not, but I remember there was a company on the Pacific coast that opposed it first, thinking that we were going to go into the shipping business in competition with them. It was pointed out clearly to them that that was not our intention, but it was our intention to assist them, and that there was no good reason why a transport leaving Honolulu, when a cargo of sugar was on the piers there waiting for some commercial ship to come and take it, we should not carry it.

Mr. McKENZIE. Suppose on one of your transports you wanted to bring some heavy timber from the Pacific coast around to the Atlantic seaboard to be used in construction work of any character, would there be any objection made by the coastwise shipper to the Government doing that character of work?

Gen. HINES. I doubt if the coastwise shipper would object, but the railroads might object. We are to-day doing very much of that same thing, not with timber, but I have one cargo transport that is running from New York to San Francisco, or New York to Honolulu. We put that vessel on the run through necessity. We found we had a large amount of motor transportation on this coast, and it was needed to complete the equipment of units in the Hawaiian Islands and in the Philippines. To transport that by rail would have cost the Government a great deal of money. The simplest and quickest way of handling it was to take a cargo transport through the Panama Canal, the simplest route for everybody, and send her around. On the return voyage we picked up a cargo of flour for the Grain Corporation, and landed it over here on the Atlantic. In that way we are working the transports at maximum capacity, and also with maximum efficiency.

There is no reason why, in time of peace, that the same policy should not be followed, so far as the Government's supplies are concerned.

Mr. McKENZIE. It seems to me that would be a good, ordinary business policy.

Gen. HINES. Yes.

Mr. McKENZIE. And a great improvement. For example, an instance was called to my attention at Camp Grant, where the people of Rockford, Ill., were very anxious to buy the surplus lumber they had at Camp Grant, but instead of selling it there, they shipped a

large quantity of it to the Philippine Islands, and in Mr. Kahn's country, or up north of him in Washington and Oregon, they had some lumber, and it did not strike me that that was a good business transaction.

Gen. HINES. It is not a good business transaction, and I think the Government is entitled to have facilities like its transport service operated at maximum efficiency and get the money that comes from the same source. The people have to pay for it eventually, and there is no good reason why, because a certain railroad is looking for business, or a certain steamship company is looking for business, we should not operate our own facilities, whatever we have, at maximum capacity and maximum efficiency.

Mr. MCKENZIE. Absolutely. I beg your pardon for interrupting you, General.

The CHAIRMAN. During peace times you always had one or two transports in reserve, so that if one of them met with a mishap you could immediately replace her while she was in a dock for repairs.

Gen. HINES. That is exactly right, Mr. Chairman; and then we have found that a study of the transport service during this 20-year period of operations shows that transports have been used in all kinds of emergencies, in transporting supplies to various people.

The CHAIRMAN. Once in a while you were compelled to send one up to Alaska to carry supplies there?

Gen. HINES. Yes, sir. Now, I might say that these new transports that are building, if the committee will recall, are practically the only transports that have ever been constructed for the United States as transports. All of the other vessels we have chartered or purchased and converted them as transports. These we are building are being built on lines that we think transports should be built on. They are being constructed by the Emergency Fleet Corporation out of money appropriated by Congress; and, of course, the vessels they will replace, especially the German vessels which we are using, can all be put in commercial trade or disposed of, I think, to good advantage to the Government.

Now, Mr. Chairman, an analysis of the items of water transportation, as compared with prewar years, and other years, shows that the money we are asking for here, when you consider the increased cost of labor and material, is really less, slightly less than the estimates in prewar years. I have the feeling that when the new transports come into service, in view of the fact that they are oil burners, requiring smaller crews, the estimates finally on a peace basis will be less than they were in 1916.

The CHAIRMAN. As a matter of fact, when you have oil burners, you do not have so many watchmen, because there are no sparks to fall on canvas and other inflammable and combustible material, and the danger of fire is less.

Gen. HINES. Very much less.

The CHAIRMAN. Then, besides that, after you coal up a ship, you generally have to do a deal of painting, do you not?

Gen. HINES. Yes, and cleaning up.

The CHAIRMAN. And with oil as fuel, you avoid all that extraordinary expense, as I am told.

Gen. HINES. That is correct. The oil burners in the Pacific will undoubtedly prove very economical transports. One deficiency that

exists now will have to be corrected, and that is to build up an adequate oil supply at Manila. At the present time the purchase of oil at Hongkong at \$4 a barrel is almost prohibitive, and not only the Army transports burning oil, but the Shipping Board vessels are at the mercy of the English companies until that is corrected.

The CHAIRMAN. Some of the commercial liners on the Pacific carried oil to Honolulu in the Hawaiian Islands by having a double keel, the space between the inner keel and the outer keel being filled with fuel oil. Can your transports be fitted in that way?

Gen. HINES. They are fitted with what is called a double bottom, and the double bottom is utilized for a reserve of oil. In operation the proper thing to do would be, when you reach Manila, to discharge all the surplus oil over and above a safe margin for the return trip there and take advantage of your transportation over. These transports are constructed with that in view.

The CHAIRMAN. That is exactly what I had in mind, so that would help to minimize your difficulties in regard to oil in the Philippines.

Gen. HINES. Yes, sir; but the storage facilities there is really the controlling factor to-day. The Shipping Board and the Navy combined—and the War Department hopes to cooperate with them—have a plan now which contemplates the erection of large storage tanks in the Philippines.

This is the statement that I referred to, Mr. Chairman, that I would like to have go in the record.

The CHAIRMAN. Very well.

(The statement referred to is as follows:)

SUMMARY.—ESTIMATE FISCAL YEAR 1921.

Transportation service.

	175,000.		200,000.		225,000.		299,000.	
	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.
Water (transports).....	15,154,736.50	\$86.59	15,154,736.50	\$75.77	15,154,736.50	\$67.36	15,154,736.50	\$50.68
Water (harbor boats).....	5,402,336.14	30.87	5,402,336.14	27.01	5,402,336.14	24.01	5,402,336.14	18.07
Rail.....	22,327,047.00	127.44	25,002,187.00	124.89	27,738,209.00	123.28	33,573,160.00	112.28
Animal drawn....	2,498,739.96	14.27	2,498,739.96	12.49	2,498,739.96	11.10	3,158,189.96	10.56
Total.....	45,382,859.60	259.18	48,057,969.60	240.16	50,794,021.60	225.75	57,288,422.60	191.60

Gen. HINES. During the operation of the large trans-Atlantic fleet, which at one time reached something like 616 vessels, I was interested to find out whether in operating those vessels as we did they would compare favorably with the same service rendered by commercial companies. I have had a statement prepared here which shows the name of the vessel, the length of time it was in service, the cost of fitting the vessel, the cost of repairs, the cost of operation, and any other costs, on one side of the ledger, charged against the vessel as the outlay of the Government when putting that vessel in operation; and on the other side we have credited each vessel with its earning capacity, the number of people carried,

the number of tons of cargo carried, and credited the other side of the book in behalf of the vessel, to determine whether the service rendered cost the Government more or less than if the service had been performed commercially at the minimum commercial rates, not the maximum, but the minimum rates. That statement, of course, shows the operations for only 1918. The complete data for 1919 is not available.

The result of that statement—and if the committee wishes it entered in the record, it can be entered—shows that the gross profit to the Government by the operation of the transports by the Government as against the operation of these same vessels commercially, or the same service rendered commercially, of \$74,583,172.24. Deducting the loss against that, for the loss on any ship, where a ship lost money in operation, results in a net profit to the Government for that operation of \$57,463,079.33.

The CHAIRMAN. Let me ask you this: When the Government takes over a ship from a commercial company and converts it into a transport, the interior has to be remodeled. Were the designs made by Army officers for the sleeping quarters of the men?

Gen. HINES. Yes, sir.

The CHAIRMAN. The consequence is that plenty of air space is provided. Do you find that if you were to try to send soldiers on a commercial liner, there would be equal convenience for them in the steerage or some other portion of the ship?

Gen. HINES. No, sir; the steerage accommodations on the ordinary commercial liner are not equal to troop accommodations on a transport, not only in the respect you referred to, in air space, but in other matters. For instance, the messing facilities are not as good. We provide a special galley equipment for our troops. They have their own cooks, and the method of feeding steerage passengers on other liners does not compare with that, and whenever we transport troops on a commercial liner we usually try to obtain for them on those ships second-class passage, which corresponds, in my opinion, closer to the troop class than the steerage.

The CHAIRMAN. So that in addition to the saving there is also the comfort of the enlisted men?

Gen. HINES. Yes, Mr. Chairman; and, of course, if we attempted to use commercial vessels as they are equipped, we would never have been able to transport on those same vessels the same number of men. A great deal of space would be lost.

I am not sure, Mr. Chairman, whether you wish as much data as that to go in the record or not. It is a very extensive statement. There is a summary here.

The CHAIRMAN. You had better put in the summary. That will be sufficient.

(The summary referred to is as follows:)

Summary showing operations of Army Transport Fleet, fiscal year 1918, as per records to date—Jan. 15, 1920.

	Total amount earned.	Total cost to Government.	Gross profit to Government.
1. Troop ships, time charter.....	\$1,295,717.40	\$1,182,257.88	\$464,260.35
2. Ships owned by Army operated in Pacific Fleet.....	860,367.80	282,273.19	645,456.39
3. Ships owned by Army operated in Atlantic Fleet.....	2,127,376.00	1,617,066.87	609,189.00
4. Allied ships, special arrangement.....	5,101,351.00	240,361.06	4,860,989.94
5. Cargo ships (Dutch).....	8,191,791.60	4,787,393.59	3,404,398.01
6. Interned and Shipping Board troop ships.....	36,601,320.00	21,562,964.68	17,632,900.16
7. Interned and Shipping Board cargo ships.....	18,214,426.00	1,847,787.40	16,401,608.81
8. Cargo ships, time charter.....	18,166,102.20	9,141,314.87	9,734,202.66
9. Cargo ships, bare boat charter.....	50,586,173.80	37,116,156.05	19,571,091.09
10. Ships owned by Navy—expense incurred for account of Army.....	354,048.20	457,600.40	186,164.57
11. Troop ships, bare boat charter.....	10,476,282.80	17,349,612.74	1,072,611.26
Total.....	151,974,956.80	95,584,788.73	74,688,172.24

	Loss to Government on part of ships.	Net loss on this class.	Net profit to Government.
1. Troop ships, time charter.....	\$350,800.83	.....	\$113,459.52
2. Ships owned by Army operated in Pacific Fleet.....	67,361.78	.....	578,094.61
3. Ships owned by Army operated in Atlantic Fleet.....	98,879.87	.....	510,309.13
4. Allied ships, special arrangement.....	.....	.....	4,860,989.94
5. Cargo ships (Dutch).....	.....	.....	3,404,398.01
6. Interned and Shipping Board troop ships.....	2,594,544.84	.....	15,038,355.32
7. Interned and Shipping Board cargo ships.....	34,970.21	.....	16,366,638.60
8. Cargo ships, time charter.....	709,415.33	.....	9,024,787.33
9. Cargo ships, bare boat charter.....	6,101,073.34	.....	13,470,017.75
10. Ships owned by Navy—expense incurred for account of Army.....	289,716.77	\$103,552.20	103,552.20
11. Troop ships, bare boat charter.....	6,873,329.94	5,800,418.68	5,800,418.68
Total.....	17,120,092.91	5,903,970.88	57,463,079.38

The CHAIRMAN. Let me ask you this question: When the Government turns back those vessels which it commandeered or leased for the transport service during the war, and to which vessels these repairs that I have referred to were made, has it been a part of the contract that you were to restore them to the condition they were in for the carrying of freight and passengers at the time they were taken over by our Government?

Gen. HINES. Yes, sir; the Government's charter required that the vessel be surveyed at the time we took her over, and her condition noted then, and we are required, upon releasing her, to return the vessel in the same condition, air wear and tear excepted, as when the Government took the vessel over.

The CHAIRMAN. Has your department been making those repairs?

Gen. HINES. We have found, Mr. Chairman, that in most cases, especially when the owners of the vessels were desirous of getting the vessels quickly, that the Government could best agree, after the survey, item by item, with the owners on a lump-sum payment, and thus avoid the payment of charter hire for a long period during the time these repairs were being made. In some cases the owners have not agreed to that, in which event the repairs were made by contract or in the Navy Yards, and paid for by the Government.

The CHAIRMAN. Are those repairs nearly completed?

Gen. HINES. The survey of the ships is entirely completed. The question of reaching a settlement with the owners is still going on, but the work is progressing very rapidly, and I hope that by the 1st of May the joint board of review, which reviews all the proceedings of the survey boards, will complete their work in New York.

The CHAIRMAN. This bill, then, is not carrying any amount for that kind of work?

Gen. HINES. No, sir. The money for all that is included in previous appropriations, and we have sufficient funds to cover it.

Mr. McKENZIE. General, when you took over these ships, did you have a contract in each instance, specifying the amount the Government should pay the owner of the ship, or were there instances where you just took over the ship, and there was an informal contract, and settlement has been made afterwards?

Gen. HINES. In nearly every case the vessels came into the War Department service from the Shipping Board. They were the requisitioning agency for the United States Government. At that time, in practically every case, with the exception of the Dutch vessels which we really seized in our harbors, an agreement was made at the time the vessel was taken over whereby the owner was paid so much per dead-weight ton per month for his vessel.

Mr. McKENZIE. Are there any claims of any consequence pending against the Government by the owners of these vessels arising out of these various contracts?

Gen. HINES. Very few of those, Mr. McKenzie. There are a number of claims for damages caused by collisions, or something of that kind; and under our law, a vessel in the United States service, if you will remember, is exempt from that kind of an action in the courts, but there is a bill now before Congress which, if it is passed, will enable the owners to file claims in what they call personam against the vessel, or in tort against the vessel, and collect various claims for damages incident to collisions, and things of that kind.

So far as the claims on the contracts are concerned, these boards that are now operating under my department in reaching a settlement with the owner on reconditioning repairs, or anything of that kind—whenever they reach a decision and a settlement with them—they get a clean bill of health for the United States, relieving the Government from all future actions against the service of that ship.

Mr. McKENZIE. What do you say, General, as to the character of the charges made by these various shipowners for the service of their vessel rendered? Were they exorbitant or reasonable?

Gen. HINES. I consider that the charter hire paid, which was established by the Shipping Board, is a fair compensation for the use of the vessel. As compared with the requisition rates of Great Britain, it is 33½ per cent greater.

The CHAIRMAN. The British percentage is greater?

Gen. HINES. No; the British percentage was less. Their charter rates were less than the Shipping Board paid the American shipowners for vessels they requisitioned.

The CHAIRMAN. Was that due to the fact that the cost of construction of the British ship was also less?

Gen. HINES. Yes, sir; and also the cost to the owners was considerably less. The cost of labor, the cost of material, and everything—the original cost—was less. American wages and American upkeep have always been greater than the British costs.

The CHAIRMAN. Especially under the seaman's act?

Gen. HINES. Yes, sir.

Mr. McKENZIE. It is not contended seriously, I take it, that in fixing these rates after we got into the war, by the Shipping Board or any other governmental agency, with the owners of these vessels, the cost of the ship cut any particular figure?

Gen. HINES. No.

Mr. McKENZIE. Because at that time ocean rates were sky high, were they not, before we got into the war?

Gen. HINES. They were very high. Fortunately, the charter rates were established by the Shipping Board soon after we got into the war, so that I feel that the rates that we did finally agree upon were much less than they would have agreed upon six months later.

Mr. McKENZIE. You have not any fear that any ship owner or any corporation controlling ships will come in hereafter with a case stating that they did not receive at least just compensation for the use of their property?

Gen. HINES. I have no apprehension. They can not under that contract.

The CHAIRMAN. Well, the releases that you are getting from the owners of the vessels would probably preclude that?

Gen. HINES. They will protect the Government. The only fear I have, Mr. Chairman, is that Congress might pass that bill allowing libel suits to be filed against vessels in the service of the United States. That will open the door for all kind of claims.

The CHAIRMAN. You do not recommend the passage of that bill?

Gen. HINES. I do not, because I believe that is one of the conditions and results of the war, and they should take their burden, or that part of the burden and be permitted to go ahead and operate an American merchant marine.

The CHAIRMAN. Well, have you anything further that you desire to submit?

Gen. HINES. I have referred, Mr. Chairman, to the operations for 1918. While the information for 1919 is not entirely complete, and we have certain accounts still due from the Navy for operations for the transport service, it appears that on the operations of 1919 a saving of approximately \$107,000,000 will be made.

That statement is a summary, Mr. Chairman, and I suggest that it be put in the record.

The CHAIRMAN. All right.

(The statement referred to is as follows:)

Summary showing earnings of Army transport fleet, fiscal year 1919, as per records to date, Jan. 15, 1919.

	Total amount earned.	Total cost to Government.	Gross earnings to Government.
French ships operated by French for United States Government.....	\$1,767,160.80	\$1,000,000.00	\$767,160.80
German ships (reparation).....	3,779,219.20	15,094,463.09	¹ 11,315,243.89
Troop ships (Dutch).....	3,847,926.00	3,771,181.76	330,786.82
Owned ships operated in Atlantic Fleet (Army).....	3,100,235.00	745,374.98	2,525,645.85
Owned ships operated in Pacific Fleet (Army).....	4,699,824.10	2,190,386.38	2,509,437.72
Interned and Shipping Board troop ships...	53,331,673.80	31,630,819.50	21,501,508.41
Cargo ships (Dutch).....	21,458,617.80	18,133,041.34	5,515,496.74
Cargo ships, time charter.....	34,963,102.00	22,372,723.61	13,413,577.95
Cargo ships, bare-boat charter.....	78,575,854.00	33,156,672.74	46,862,467.76
Interned and Shipping Board cargo ships...	136,458,954.40	58,156,975.84	78,301,978.56
Troop ships, time charter.....	1,101,932.80	1,523,390.39	200,054.49
Troop ships, bare-boat charter.....	36,936,684.40	39,282,453.59	5,225,926.67
	380,021,174.30	227,357,483.12	165,968,769.86
NOTE.—Bill of Navy.....		45,000,000.00	
		272,357,483.12	

	Loss to Government on portion of ships.	Net loss on this class.	Net profit to Government.	Remarks.
French ships operated by French for United States Government.....			767,160.80	Credit.
German ships (reparation).....		\$11,315,243.89	11,315,243.89	
Troop ships (Dutch).....	\$244,022.56		76,744.24	
Owned ships operated in Atlantic Fleet (Army).....	170,785.83		2,854,880.02	
Owned operated ships in Pacific Fleet (Army).....			2,509,437.72	
Interned and Shipping Board troop ships.....	190,652.11		21,400,854.30	
Cargo ships (Dutch).....	2,189,922.28		3,325,576.46	
Cargo ships, time charter.....	823,199.56		12,590,378.39	
Cargo ships, bare-boat charter.....	1,433,286.50		45,419,181.26	
Interned and Shipping Board cargo ships.....			78,301,978.56	
Troop ships, time charter.....	621,513.98	421,457.49	421,457.49	Credit.
Troop ships, bare-boat charter.....	7,571,695.86	2,345,769.19	2,345,769.19	Credit.
	13,245,078.70	14,082,470.57	152,663,691.18	Credit.
NOTE.—Bill of Navy.....			45,000,000.00	
			107,663,691.18	

¹ Credit.

NOTE.—See letter of U. S. Navy.

Gen. HINES. I would like also to have placed in the record, unless the committee desires that I go into details, a statement showing all the harbor craft that we own, and where it is located, and that same statement shows an analysis of this whole situation, showing where we expect a surplus of this equipment, and we can state to the committee that we contemplate selling that surplus while the prices are good. We have on hand in tugs and sailing craft of various kinds 797 vessels. We expect to maintain in the several coast defenses and harbors only 632, so there will be a surplus there of over 100 vessels to be disposed of.

The CHAIRMAN. Were they procured during the war?

Gen. HINES. They were practically all procured during the war in one way or another. Some of them are small harbor boats which

have been in the service a long time, that are being replaced with new vessels, for which we obtained funds from Congress.

The CHAIRMAN. How many of those vessels did we have in the service prior to our entrance into the war?

Gen. HINES. I can obtain that detail and put it in the record, Mr. Chairman, but offhand I should say approximately 600.

They have not increased except the lighter tugs, and boats such as lighters, etc., that we used at ports for loading cargo ships. The harbor craft, with the exception possibly of mine planters, have been more constant, with one or two replacements, than anything else.

(The statement referred to is as follows:)

Coast defenses of—	Tugs.				Submarine chasers.				Water tenders.				Derrick lighters.				Barges.				Car floats, concrete.			
	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.
Boston.....																					1	1		1
Eastern New York.....																					1	1		1
Potomac.....	1	1		1																				
Chesapeake.....	1	1		1	2	2		2																
Cape Fear.....																								
Mobile.....	1	1		1																				
Charleston.....	1	1		1																				
Los Angeles.....	1	1		1																				
Columbia.....									1	1		1												
Puget Sound.....																								
San Francisco.....	1	1		1	1	1		1																
Oahu.....	1	1		1	1	1		1																
Balboa.....	1	1		1	1	1		1	2	2		2												
Manila.....																								
Total.....	13	13		13	11	11		11	3	3		3	4	4		4	4	4						
Transportation service:																								
Aberdeen.....	1	1		1																				
Langley Field.....																								
Fort McDowell.....									1	1														
Fort Mason.....	1	1		1					1	1		1												
Balboa.....																								
Port of Manila.....	1	1		1																				
Port of New York.....	26	14	12	14					59	10	49	10	37	15	22	15	12							
Port of Norfolk.....	7	4	3	4					15	3	12	3	8	4	4	4								
Total.....	36	21	15	21	1	1		1	3	3		3	74	13	61	13	48	22	26	22	12			
Grand total.....	49	34	15	34	12	12		12	6	6		6	78	17	61	17	52	26	26	26	12			

Coast defenses of—	Coal boats.				Coal hoisters.				Steam lighters.				Colliers.				Lorchas.				Mine planters.			
	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.
Narragansett.....				2		2																		
Portsmouth.....																								
New Bedford.....				2		2																		
Boston.....				2		2																		
Ortland.....				1		1																		
Delaware.....				1		1																		
South New York.....				1		1																		
Sandy Hook.....				1		1																		
Long Island Sound.....				1		1																		
Baltimore.....				2		2																		
Eastern New York.....																								
Chesapeake.....																								
Charleston.....																								
Puert Sound.....																								
San Francisco.....																								
Cristobal.....																								
Manila.....																								
Total.....																								
Transportation service:																								
Port of Manila.....				5		5							1	1			1	1						
Port of New York.....	4	4		4	5	5			12	6	6						26	26						
Total.....	4	4		4	5	5			12	6	6						26	26						
Grand total.....	4	4		4	5	5			12	6	6						26	26						

Coast defenses of—	Junior mine planters.			Rowing yawls.			Motor mine yawls.			D. B. boats.			Rowboats.		
	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.	Keep.	On hand.	Needed.	Rec. sold.
Narragansett.....	1	1													
Fortmouth.....	1	1													
Boston.....	1	1													
Portland.....	1	1													
Sandy Hook.....	1	1													
Long Island Sound.....	1	1													
Eastern New York.....	1	1													
Potomac.....	1	1													
Chesapeake.....	1	1													
Pensacola.....	1	1													
Cape Fear.....	1	1													
Galveston.....	1	1													
Tampa.....	1	1													
New Orleans.....	1	1													
Key West.....	1	1													
Mobile.....	1	1													
Charleston.....	1	1													
Savannah.....	1	1													
Los Angeles.....	1	1													
San Diego.....	1	1													
Camden.....	1	1													
Puget Sound.....	1	1													
San Francisco.....	1	1													
Salt.....	1	1													
Batavia.....	1	1													
Cristobal.....	1	1													
Mauls.....	1	1													
Total.....	20	20		25	64	63	1	63	101	96	3	98	54	50	4
Transportation service:															
Fort Mason.....															
Fort St. Michael.....															
Total.....															
Grand total.....	20	20		25	66	65	1	64	103	100	3	100	54	50	4

The CHAIRMAN. What is the use for so many small craft in the harbors for the transportation service of the United States?

Gen. HINES. Really, the main need for them is due to the fact that most of our coast defenses are located away from the mainland, and it is necessary to supply the posts. For instance, I can recall one that the chairman is familiar with—the coast defenses at Puget Sound, where they are located approximately 53 miles from Seattle. All supplies for those garrisons are carried on the boats. They are used also to allow the officers and men and their families to leave the garrisons to go to the large cities, and it is safe to say that 75 per cent of the small craft is used for that purpose. The rest of them are connected with our mine defenses, mine planters, and distribution box boats, used in connection with the defenses and the posts.

Those that operate in New York Harbor, supply the garrison posts in the vicinity of that city. In New York Harbor they also have a ferry service from Manhattan to Governor's Island, that you are familiar with, and in one or two other places we have a similar service.

The CHAIRMAN. Out in San Francisco Bay you have a service to the island of Alcatraz, to Angel Island, to Fort Barry, and to Fort Baker?

Gen. HINES. Yes. Nearly all the coast defenses are located where craft of that kind are necessary, and that is particularly so in the insular possessions, and we have a number in the Philippines and Hawaii.

Mr. McKENZIE. General, these vessels that you are speaking of now are all manned by civilian crews, I think?

Gen. HINES. They are all manned by civilian crews, except the mine planter service, where the crews consist of enlisted personnel.

Mr. McKENZIE. Are they under the command of officers of the Army?

Gen. HINES. Not the civilians. They operate really under an officer of the Army. For instance, in New York Harbor the harbor boats there are controlled by the department transportation officer, who is a Government officer, but the vessels are manned with civilians.

Mr. McKENZIE. There is no Army officer on those boats?

Gen. HINES. No, sir.

The CHAIRMAN. Of course, the same is true even with the ocean-going transports, except that you have a transport officer——

Gen. HINES (interposing). A transport quartermaster in each ship.

The CHAIRMAN. Yes; a transport quartermaster on each ship.

Gen. HINES. The question as to whether it is advisable to put commissioned and enlisted personnel on those vessels is one that I am now making a study of. I am not sure whether I will recommend to Congress such a policy or not. There are many good arguments in favor of having such a force, but I believe we can reach the same object by having the civilian crews become interested in the reserve, so that when we take a vessel into the service from a commercial line we could take the vessel, crew, and everything else in, swear them in, and let them serve their country there rather than introducing a crew and starting all over again when we take the vessel over.

The CHAIRMAN. But during the war you manned the vessels with the men from the Navy?

Gen. HINES. The Navy; yes, sir.

The CHAIRMAN. Now, you just mentioned that you made a saving of \$109,000,000 for the Government during the year 1919. Was the reduced pay of those Navy crews—

Gen. HINES (interposing). That played a material part.

The CHAIRMAN. All right, General.

Gen. HINES. Mr. Chairman, I have no further general statement to make. I have here a statement covering the further details under each of the items, but if there is any particular item which the committee desire information, I can give it. In each case the item is explained in detail, and I would like very much to have that detail go in the hearing, if the committee so desires.

The CHAIRMAN. We would like to have it. We want to know in particular how much of the total is to be expended for rail transportation, for water transportation, for motor transportation, and for horse-drawn transportation.

Gen. HINES. A statement introduced in the record shows that for an Army of 299,000 men, the estimates call for, for water transportation, \$15,154,736.50, on a per capita cost of \$50.68; for harbor boats connected with water transportation, \$5,402,336.14, or a per capita cost of \$18.07; for rail transportation, \$33,572,160, or a per capita of \$112.28; for animal-drawn transportation, \$3,158,189.96, or a per capita of \$10.36, making a total of \$57,000,000.

This statement is divided in the same way, for a 175,000 army, a 200,000 army, and a 225,000 army.

The CHAIRMAN. You will insert those?

Gen. HINES. That is in the record now, Mr. Chairman. This morning, if you will recall, I pointed out that of that total approximately \$16,000,000 could be still chargeable as war expenditure.

The CHAIRMAN. Have you been able to transport materials and men over those lines of railroad known as the land-grant roads at a substantial reduction from what you would have had to pay if you had paid the full rates?

Gen. HINES. Mr. Chairman, we get the benefit of the 50 per cent rate on freight rates and of course there is a reduction wherever we transport troops or supplies over railroads of that kind.

The CHAIRMAN. So that in transporting troops in the western country, where the distances are quite extensive and the number of troops that have to be hauled at times is exceedingly large, we get the benefit of a very reduced rate, which equalizes things after all.

Gen. HINES. Yes; and we take advantage of routing troops and supplies in that way so that we will get advantage of that rate.

Mr. GREENE. General, have you in the totals you have prepared, or expect to have inserted in the record, made any detailed statement as to how you arrived at the estimate for the transportation of troops from station to station?

Gen. HINES. Yes, sir; that is in the record, I think, on exactly the same basis of the calculations for that.

Mr. GREENE. You have in mind just what this recent discussion suggests, that a part of this thing is chargeable to war expense, but now that you have gotten approximately to a normal basis it will gradually approach to that normal, doubtless?

Gen. HINES. We have taken that into account in the estimate, as you will see by the details under that particular item.

Gen. LORD. Mr. Chairman, before Gen. Hines leaves, with the approval of the committee, and if Gen. Rogers, the Quartermaster General interposes no objection, I would like to take up inland port storage and shipping facilities, because Gen. Hines is interested in a subject under that. That is on page 45. Col. Everitt is here from the Quartermaster General's office and will discuss that item.

The CHAIRMAN. The amount involved is considerable?

Gen. LORD. The amount carried in the book of estimates, as given to the committee, is \$50,000,000. The amount that was recommended to the Secretary of War for approval is \$30,000,000, divided as follows: To the Transportation Service, \$2,455,650; to the Office of the Director of Purchase and Storage, \$27,544,350. If there is any reduction made in that estimate, I will submit it in the record.

The CHAIRMAN. In other words, you are asking for this coming year just what you had during the last fiscal year?

Gen. LORD. No; just what was given for the current fiscal year.

Col. EVERETT. I might say that by a revision of the figures at a late date, we are able to reduce that estimate there to \$20,504,117.88. It would perhaps be pertinent to bring that in at this time.

The CHAIRMAN. That is still a very considerable reduction.

Col. EVERITT. Yes.

The CHAIRMAN. How much is that?

Gen. HINES. The item that I am to defend amounts to \$2,455,650, and pertains to the piers and railroad facilities connected with storage and a matter of their direct transportation. I would like to say in connection with that that this estimate is to cover operations of the new army supply bases for which Congress appropriated something like \$146,000,000.

The policy of the Department is to utilize for commercial purposes as rapidly as we can the piers of these terminals and at least derive some revenue from the large expenditure which the government has placed in them.

The CHAIRMAN. I predicted, when we were asked for this money, that this was taking on government ownership of docks.

Gen. HINES. At the present time, I can state to the committee that the terminals at Hoboken, some of the piers at South Brooklyn, the piers at Boston, Norfolk, Charleston, and New Orleans, are to-day being utilized commercially. The annual revenue coming in from the Hoboken terminals for two piers at the present time is at the rate of \$360,000 a year.

The CHAIRMAN. What rate is that on?

Gen. HINES. \$15,000 per month for a pier.

The CHAIRMAN. How much did those piers cost?

Gen. HINES. The Hoboken terminals, consisting of six piers, cost the Government approximately \$7,000,000, a little over \$7,000,000. The rates that we have fixed so far are based on the bond issue of 4½ per cent, plus a 2 per cent depreciation, and then the cost of upkeep, which makes the rate a little over 7 per cent on the investment.

The CHAIRMAN. The amount that you are receiving is a little over 7 per cent?

Gen. HINES. It runs about 7 per cent on the money invested by the Government.

The CHAIRMAN. \$7,000,000?

Gen. HINES. We feel that later on the terminals will probably be used by the Shipping Board, in which event, if you consider the

Shipping Board as a corporation for the moment, the return to the Government should be fixed at about the rate of the bond issue, or 4½ per cent, so that the Government eventually will be receiving from these terminals, as long as it retains title, the amount at least that it is paying on the amount of bond issue used for such purpose. I think that is the minimum we should receive.

Now, in addition to leasing out the piers not needed by the War Department, we are docking vessels whenever space is available at terminals which we still have to use. Many supplies are coming in, and the Quartermaster General is concentrating these supplies at the various depots and releasing rented space. That revenue amounts to considerable, and will increase as we decrease our activities, so that while \$2,455,000 may seem considerable, a large part of that, if not all of it, during the next year will be returned to the Government in rentals of the kind I have just mentioned.

The CHAIRMAN. How much did the concrete docks that we built in Brooklyn, near the Bush Terminals, cost the Government?

Gen. HINES. I think I have that right here, Mr. Chairman. The cost of construction work at south Brooklyn was \$26,000,000, and the cost of land was \$6,000,000. I have a statement which shows the details on all of these terminals, if you desire that to go in the record.

The CHAIRMAN. It cost \$32,000,000 in toto?

Gen. HINES. The total cost is \$32,000,000.

The CHAIRMAN. What rentals do we obtain for the use of those docks?

Gen. HINES. We have not to date been able to lease out the entire piers. We have docked ships at the commercial rates for docking vessels. I think the rate in New York for the average vessel is about \$250 a day, between \$125 and \$250 a day. Up to date I think something like \$34,000 has come in and been deposited in the Treasury for services of that kind.

The CHAIRMAN. So you are not getting anything like the interest on the cost of those docks at the present time?

Gen. HINES. Not yet. We hope within a very short time to be able to lease probably two or more of those piers for commercial purposes, on similar leases to those at Hoboken, which will bring in a definite revenue. The basis of that will be as I have stated.

The CHAIRMAN. The German piers were taken over from the German companies?

Gen. HINES. We took over the North German-Lloyd and the Hamburg-American Line piers under a proclamation of the President. They were appraised, and the appraised value was paid to the Alien Property Custodian.

The CHAIRMAN. And that money is now in his hands?

Gen. HINES. That money is now in his hands; yes, sir. The title, of course, is in the United States, and the custody in the War Department at the present time. Did I understand, Mr. Chairman, that you would like to have this statement?

The CHAIRMAN. Yes; we would like to have it in the record.

Gen. HINES. This shows the total cost of each terminal, and the amount of storage space, pier space, and so on.

(The statement referred to is as follows:)

General statistics pertaining to Army port terminals.

Base and location.	Open stor- age, square feet.	Protected storage, square feet.	Area, acres.	Storage capacity, tons.	Capacity, 10-hour day, tons or cars.	Berthing space, linear feet.	Capacity, average vessels.	Mean low water at wharf.	Cost, square feet, ex- cluding sheds.	Cost, square feet, in- cluding sheds.	Rental, square feet, ex- cluding sheds.	Rental, square feet, in- cluding sheds.
Boston, South Boston, 1 mile from South Station; adjoins Common- wealth Dry Dock.	400,240	2,043,863	82	275,000	13,200 tons, 440 cars.	5,400	11	Feet. 35	\$11.70	\$12.71	Cents. 66.3	Cents. 76.3
South Brooklyn, Fifty-eighth Street and Second Avenue.	None.	4,681,220	100	450,000	12,000 tons.....	9,000	21	40	6.73	9.00	41.7	54.5
Port Newark, west side Newark Bay, L. V. & C. R. R.	356,870	2,025,480	133	400,000	15,000 tons.....	3,800	(1)	15	4.99	6.10	30	36.6
Philadelphia, Delaware and Oregon Avenues.	None.	847,848	120	165,000	9,000 tons.....	2,820	7	35	14.05	.....	84.3	.....
Norfolk, Sewalls Point.....	1,001,605	2,948,904	912	850,000	1,000 tons.....	2,656	6	35	10.39	14.26	64.4	85.5
Charleston, Cooper River south of Goose Creek.	None.....	1,801,900	1,090	300,000	2,400 tons.....	3,575	9	35	8.95	11.00	53.7	66
New Orleans, Dauphin, Poland and Manuel Streets.	None.....	2,145,737	50	175,000	2,500 tons.....	2,040	5	30	5.83	8.00	35	43
Hoboken, River Street, Hoboken.....	.....	.....	.....	.....	.....	9,080	20	.....	.....	.....	.....	.....
Total costs (all terminals except Hoboken).	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

1 Light draft and barges only.

General statistics pertaining to Army port terminals—Continued.

Base and location.	Cost, real estate.	Cost, construction work.	Total cost.	Allotment.	Started.	Finished.	Terminal track, miles.	Capacity of terminal, cars.	Principal structures.
Boston, South Boston, 1 mile from South Station adjoins Commonwealth Dry Dock.	1 \$3,000,000	\$22,337,000	1 \$24,787,000	\$28,040,000	Apr. 22, 1918	June 4, 1919	15.481	800	1 warehouse, 1 wharf, 1 pier, 1 wharf shed, 1 pier shed, 1 power plant, 1 electric station, 14 administration buildings.
South Brooklyn, Fifty-eighth Street and Second Avenue.	6,000,000	26,000,000	32,000,000	32,515,500	May 15, 1918	Aug. —, 1919	22.579	1,300	2 warehouses, 3 pier sheds, 4 piers, 1 administration building, 1 boiler house, water, lighting, sewage systems.
Port Newark, west side Newark Bay, L. V. & C. R. R.	1,395,000	10,418,000	11,813,000	10,280,717	Oct. —, 1917	Mar. —, 1919	12.397	860	9 warehouses, 2 sheds, open, 1 bulkhead pier.
Philadelphia, Delaware and Oregon Avenues.	740,000	12,610,000	13,350,000	12,555,000	Aug. —, 1918	Sept. —, 1919	15.438	1,119	
Norfolk, Sewalls Point.....	2,575,000	26,675,000	29,250,000	28,752,376	Mar. —, 1918	July —, 1919	38.716	2,330	8 warehouses, 2 pier sheds, 2 piers.
Charleston, Cooper River south of Goose Creek.	550,000	14,450,000	15,000,000	12,675,000	June —, 1918	July —, 1919	32.569	2,000	6 warehouses, 2 head houses, 2 open sheds, 1 bulkhead wharf, 1 ordnance depot wharf.
New Orleans, Dauphin, Poland and Manuel Streets.	334,000	12,336,000	12,700,000	12,066,571	July —, 1918	July —, 1919	8.839	600	3 warehouses, 1 wharf shed, 1 wharf.
Hoboken, River Street, Hoboken.....			\$ 7,121,583						
Total costs (all terminals except Hoboken).		124,826,000	138,900,000	143,792,947					

1 Correct, within \$1,000,000 cost of land in dispute.

2 Hamburg-American, \$2,314,577; North German Lloyd, \$4,896,706.

SPECIFIC STATISTICS PERTAINING TO ARMY PORT TERMINALS.

BOSTON ARMY SUPPLY BASE.

Warehouses.—Number, one. Construction, reinforced concrete. Dimensions, 126 by 1,638 feet (6 sections). Paving, upper, granolithic; lower, wood block. Load per square foot, ground, 500; others, 300. Elevators, 4 each section, 9 by 17 feet, 10,000 pounds, speed 100 feet per minute; automatic and operator. Floor area, square feet, gross, 205,388; net, 165,110. Total area, square feet, gross, 1,651,104; net, 1,320,883. Heating, hot water; auxiliary steam coils. Number of stories, eight.

Pier sheds.—Number, two (twin). Construction, reinforced concrete; Raymond type foundation. Dimensions, 100 by 924 feet. Stories, three. Overhead clearance, first, 24 feet; others, 14 feet. Elevators, 8 each building, 12,000 pounds each; 4 Otis, 4 A. B. C.; speed, 50 feet per minute; operator. Floor area, square feet, net, 341,000.

Power plant.—Dimensions, 80 by 85 by 78 feet. Construction, structural steel and concrete. Equipment, 6 Heine boilers, 400 horsepower each; forced draft; mechanical stokers; twin stacks, 165 by 9 feet; 700-foot overhead bunker.

Electric substation.—Dimensions, 54 by 86 feet, one story and basement. Construction, reinforced concrete, brick curtain. Equipment, six 13,000-volt transformers; two 500-kilowatt rotary converters; three switchboards; three pumps, 100 horsepower each; one storage equipment; current delivered at 13,800 volts, cut to 2,300 volts, 230 volts, 110 volts.

Water supply.—Piping, four 16-inch lines; two low, 50 pounds; two high, 90 pounds.

Sewerage system.—Dimensions, 6 inches to 1 foot 8 inches, 5,000 feet long; discharge 1.6 second-feet to 3.5 second-feet.

Fire protection.—Storage, sprinkler system. Warehouses, stand pipe, hose, extinguishers, hydrant.

Shipping facilities, wharf shed.—First floor (deck), live load 600 pounds, 3 feet 6 inches overhead clearance; second floor, 400 pounds, 29 feet 8 inches overhead clearance. Construction, structural steel, concrete curtain. Heating, offices only. Dimensions, two stories, 100 by 1,638 feet. Area, square feet, 328,000. Loading, can be done direct to ship from second floor. Equipment, 4 electric bridge cranes, 2½-ton, 44 feet; 2 steam locomotive cranes, 15-ton; 1 steam locomotive crane, 18-ton; 1 steam locomotive crane, 40-ton; 24 electric dock winches (2,500 pounds at 225 feet p. m.).

Wharf.—Area, 10 acres. Construction, concrete on piling. Dimensions, wharf capacity 5,400 feet long for berthing, 4,100 linear feet in straight line, 35 feet wide at wharf shed with two railroad tracks and crane track. Open wharf, 125 feet wide, double railroad track line, pier shed wharf 28 feet wide, both sides shed 25 feet wide at pier end.

SOUTH BROOKLYN ARMY SUPPLY BASE.

Warehouses.—Number, two (A and B). Construction, reinforced concrete. Dimensions, A, 200 by 980 feet; B, 306 by 980 feet. Paving, granolithic, broken mastic aisles. Load per square foot, dock to third floor, 300 pounds; other floors, 250 pounds. Elevators, A, 30-10,000, speed, 150 feet per minute; B, 42-10,000; automatic and operator. Floor area square feet, A, gross, 196,000; net, 156,800; B, gross, 251,040; net, 200,832. Total area square feet, A, gross, 1,568,000; net, 1,254,400; B, gross, 2,008,320; net, 1,606,856. Heating, high-pressure steam. Stories, eight.

Pier sheds.—Number, three. Construction, structural steel. Dimensions, 145 by 1,270 feet. Stories, two; load first floor, 500 pounds; load second floor, 300 pounds. Operating devices, steel cargo beam and walkway. Elevators, provision for 12—not installed. Floor area square feet, 939,168 (total).

Power plant.—Dimensions, 88 by 137 feet. Construction, reinforced concrete and girder. Equipment, six 440 horsepower Babcock & Wilcox boilers; three fans, 66,000 cubic feet per minute; three 150 horsepower motors; three boiler feed pumps; one feed water heater, 6,000 horsepower; two fire pumps, 100 gallons per minute, 100-pound pressure; one fire pump, 1,000 gallons per minute; coal and ash equipment; stacks 1; custodies, bottom, 20 feet; height 242 feet; top, 12 feet.

Direct high-tension service water supply.—Equipment, three centrifugal pumps; two steam turbines; one electric motor.

Sewerage system.—Direct connection city system.

Fire protection.—Equipment, two 12-inch high-pressure, 20 inch low-pressure city system stand pipe and tanks.

Shipping facilities.—Piers, Nos. 1, 2, 3, 4. Dimensions, No. 1 uncovered, 60 by 1,346 feet; No. 2 covered, 150 by 1,324 feet; No. 3 covered, 150 by 1,307 feet; No. 4 covered, 150 by 1,293 feet. Construction, concrete deck slab, bent and pile. Slips, 4—A, 145 feet wide; B, 195 feet wide; C, 250 feet wide; D, 250 feet wide. Tracks, double standard gauge center each pier, yards connect with Bush Terminal and L. I. R. R.; 4 float bridges; 17 miles track, 172 switches.

PORT NEWARK ARMY SUPPLY BASE.

Warehouses.—Number, nine (Nos. 1 to 9). Construction, terra cotta, brick, timber. Dimensions, 161 by 1,121 feet. Stories, one (except No. 4, has two). Area, each, square feet, gross, 180,481; net, 162,433. Area, total square feet, gross, 1,624,329; net, 1,461,897. Other data, 18-foot platform, both sides, each warehouse; 4 heated.

Sheds.—Number, two (A and B). Construction, light frame, one-story, sides and ends open. Dimensions, 161 by 1,121 feet. Floor area, square feet, gross, 180,481; net, 162,433. Total area, square feet, gross, 360,962; net, 324,866.

Shipping facilities.—Bulkhead wharf, 80 by 3,800 feet, 956 feet covered; ramps to warehouses, 1 to 5, inclusive; 3 tracks west side to No. 4; load, 800 pounds per square foot.

PHILADELPHIA ARMY SUPPLY BASE.

Pier shed.—Dimensions, south wing, 96 feet wide; north wing, 102.5 feet wide; 1,500 feet long. Construction, reinforced concrete and brick. Floor area, square feet, gross, 279,750; net, 253,088. Total area, square feet, gross, 893,250; net, 759,263. Load per square foot, 500 pounds. Stories, three.

Fire protection.—Sprinkler system throughout.

Shipping facilities.—Piers, two (B. & C.). Construction, untreated pile and timber. Dimensions, pier B, 290 by 1,500 feet covered; Pier C, 290 by 1,320 feet open; north apron, Pier B, 35 feet 9 inches wide; south apron, Pier B, 11 feet wide; slip between B and C, 250 feet wide; slip north side of C, 72.5 feet wide; slip south side of B, 105 feet wide.

NORFOLK ARMY SUPPLY BASE.

Warehouses.—Number, eight. Construction, reinforced concrete. Dimensions, 126 by 1,638 feet. Stories, eight. Floor area, gross, 206,388 square feet; net, 165,110 square feet. Total area, gross, 1,651,104 square feet; net, 1,320,883 square feet.

Pier sheds.—Number, two. Construction, reinforced concrete. Dimensions, 100 by 924 feet. Stories, three. Floor area, gross, 92,400 square feet; net, 73,920 square feet. Total area, gross, 277,200 square feet; net, 221,760 square feet.

Fire protection.—Sprinkler system throughout.

Shipping facilities.—Piers, two. Docking length, south side, 4,000 linear feet; north side, 1,000 linear feet; east side, 300 linear feet. Wharf sheds, two. Construction, structural steel and concrete. Dimensions, 100 by 1,638 feet, two stories. Floor area, gross, 163,800 square feet; net, 139,230 square feet. Total area, gross, 327,600 square feet; net, 279,460 square feet.

CHARLESTON ARMY SUPPLY BASE.

Warehouses.—Number, six. Construction, tile, timber roofing. Dimensions, 160 by 1,200 feet. Stories, one. Floor area, gross, 192,000 square feet; net, 172,800 square feet.

Head houses.—Number, two: No. 1, 150 by 1,360 feet; No. 2, 150 by 400 feet. Floor area, gross: No. 1, 204,000 square feet; No. 2, 183,600 square feet. Net: No. 1, 60,000 square feet; No. 2, 54,000 square feet. Loading platform, 50 by 2,000 feet. Load per square foot, 800 pounds.

Open sheds.—Number, two. Dimensions, 160 by 1,200 feet. Area, gross, 192,000 square feet; net, 172,000 square feet.

Shipping facilities.—Bulkhead wharf, no piers, 2,000 feet long.

NEW ORLEANS ARMY SUPPLY BASE.

Warehouses.—Number, three. Construction, reinforced concrete. Dimensions, 140 by 600 feet. Stories, six. Floor area, square feet, gross, 84,000; net, 67,200. Total area, square feet, gross, 504,000; net, 403,200; Load per square foot, first floor, 400 pounds; second floor, 350 pounds; others, 250 pounds.

Fire protection.—Sprinkler system throughout.

Shipping facilities.—Wharf shed, structural steel, 140 by 2,000; stories, 2; load per square foot, 400 pounds; floor area, square feet, gross 260,000, net, 233,000. Total area, square feet, gross, 560,000, net, 476,000. Wharf, 170 by 2,040 feet. Construction, creosote piles and timber construction.

ROBOKEN ARMY SUPPLY BASE.

Warehouses.—Number, one. Dimensions, 100 by 100 feet, 3 story.

Bulkhead buildings.—Number, three. Construction, A, frame; B, brick. Dimensions, A, 128 by 850 feet, one story; A, 100 by 400 feet, one story; B, 172 by 345 feet, two story. Sheds (storage), one. Construction, galvanized. Dimensions, 78 by 249 feet.

Fire protection.—City water pressure.

Shipping facilities.—Piers, six; pier sheds, six. Construction, pile and timber. Safe load per square foot. Slips, 250 feet wide; pier 1, 80 by 944 feet; shed 1, 70 by 86-1 feet; pier 2, 80 by 947 feet; shed 2, 70 by 845 feet; pier 3, 90 by 946 feet; shed 3, 80 by 824 feet; pier 4, 90 by 950 feet; shed 4, 80 by 915 feet; pier 5, 80 by 903 feet; shed 5, 71 by 729 feet; pier 6, 50 by 767 feet; shed 6, 41 by 712 feet. Stories all two except No. 5 and No. 6 (one).

Gen. HINES. I have no further statement to make, unless the committee desires to ask some questions.

The CHAIRMAN. Does the statement you are going to put in the record about the transports for the ensuing year, General, show the demand for that transportation or what it will be?

Gen. HINES. Where they will be used?

The CHAIRMAN. Perhaps this is a better way of getting at it: Has the policy of the distribution of the Army for the next year been indicated to you so that you could determine whether there was going to be more or less this constant change of station, or whether the troops will likely be assembled in division units, and so on?

Gen. HINES. Our estimates are based on the policy contemplated, and there will not be any further extensive movement, as I understand, except what I have shown in the statement presented.

The CHAIRMAN. Very well, General; we are very much obliged to you.

Gen. LORD. Capt. Everitt, with the permission of Gen. Rodgers, will close this item.

The CHAIRMAN. This is still on the item for—

Gen. LORD. Inland port storage and shipping facilities.

Capt. EVERITT. This estimate, as submitted, is for \$20,504,117.88. Of this sum, \$2,500,000 roughly is for the operation of piers, etc., by the Transport Service. The balance, \$18,048,467.88, is for maintenance, rental, and operation of warehouses and of cold storage and the necessary warehouse equipment; also caring for over \$2,600,000,000 in supplies. We have in the neighborhood of 35,000,000 square feet of owned Government space, and in the neighborhood of 5,700,000 leased warehouse space, and it is all for the operation of this the above estimate is submitted.

The CHAIRMAN. Can you indicate in your figures how much of the amount is still chargeable to war experience and how much to peacetime activity? Is it possible to segregate that amount?

Capt. EVERITT. It is possible; yes, sir. I do not think that I will be able to do it right now. With sufficient time such figures as you desire could be compiled and submitted.

The CHAIRMAN. You understand what the committee is trying to do at this time? There is a feeling throughout the country, especially

by men and women who are opposed to the military establishment, on the score that the cost is something enormous, that it is a very heavy drain upon the taxpayers of the country. We all know that a great amount of the large sums we have to appropriate nowadays is due to wartime activities. We are gradually getting to a peace basis.

If the committee could get the information as to how much of the amounts we are asked to appropriate this year is due to wartime activities, and how much to peace activities, and how much we will probably have to expend in the future during peace times, the committee will be able to give information that will be very helpful to the military establishment.

Mr. GREENE. May I follow that, Mr. Chairman, by this suggestion: If that could be the text that would govern the introduction of each item, whether explained at the time or afterwards amplified in the record, it would be very helpful. Of course, it is obviously impossible, at least impracticable, to follow every item in storage and say whether it is bequeathed to us by the war, or whether we have purchased it for the normal supply of the Army, or whether it is designed for the normal supply of the Army after it was gotten. It seems to me that a rough approximation could at least give us an approximate estimate of the thing—how much of this you would have carried of this amount in a normal storage supply, and what we would now have to take care of, whether we would have carried it or not, because it is a burden left to us by the war.

If you could reach on down through the larger figures, as they are shown in the statement, and insert that approximation before it comes back to us for printing, it would enable us on the floor probably to explain some things.

Capt. EVERITT. I would like to say, sir, that it is roughly estimated that of this amount of \$18,000,000 that we ask for, in the neighborhood of \$5,000,000 is required for the maintenance of war equipment now on hand. That, of course, is a rough estimate, but it is an approximation fairly close.

Mr. GREENE. That is all we are asking you for at this time.

Capt. EVERITT. It would take a great deal of labor to get the exact figures, but it could be done.

The CHAIRMAN. It would probably take you too long to get the information before we will want the hearings printed, and the committee can get to work on the preparation of the sums that we are willing to allow.

Capt. EVERITT. Yes, sir.

Mr. McKENZIE. I would like to ask the captain, Mr. Chairman, if under this appropriation you will charge for the storage of the frozen beef that the Navy refused to buy from the Army?

Capt. EVERITT. We are incorporating in this estimate all cold storage, sir. I do not know the specific item. I would have to look that up.

Mr. McKENZIE. If it was a part of the frozen beef.

Capt. EVERITT. It is a part of the frozen beef.

The CHAIRMAN. I think it amounts to \$34,000,000.

Capt. EVERITT. Yes, sir; that is included. All of our frozen beef and everything we have is included in here.

The CHAIRMAN. By the by, have you been able to come to some agreement with the Navy about that beef?

Capt. EVERITT. They are negotiating now, sir; but as yet have reached no agreement. Mr. Freeman, the cold-storage man is here, and he says that is in process of agreement.

The CHAIRMAN. The correspondence I saw indicated that the Navy was not going to buy any of it all.

Capt. EVERITT. Yes, sir.

The CHAIRMAN. It was not good enough for them?

Capt. EVERITT. Yes, sir.

The CHAIRMAN. You may proceed.

Capt. EVERITT. Last year the estimate was submitted based upon the total squarefeet of storage space at so much a square foot, which experience showed was was a just figure, this was necessary for the reason that this storage was new and the maintenance of the bases, the operation of them, and the payment of the necessary services incident thereto were not covered in any other appropriation.

This year we have submitted the estimate based upon actual experience at these bases and leaving out such items as pertain to other estimates and which have been included therein.

For instance, the maintenance of railroad yards and the big classification yards at the depots are estimated for by the transportation service. The Construction Division have estimated for the maintenance and repair of barracks and quarters.

There is nothing further that I desire to say, unless there is some specific question which I can answer.

Mr. McKENZIE. I would like to ask the captain whether or not this storage space is gradually being reduced by the sale of surplus, or whether or not you are now buying anything, or whether the Army is buying any new material that may be coming in, and filling up the space as fast as you are selling the surplus? In other words, is it an endless chain?

Capt. EVERITT. I would like to say that when I state that we have released 31 per cent of our leased storage space during the current fiscal year, I think it shows that we are reducing considerably.

Mr. McKENZIE. That you have reduced?

Capt. EVERITT. We have actually released so far 31 per cent, and we are continuing to do so.

Mr. McKENZIE. In other words, the condition that now exists is not what will be the normal condition?

Capt. EVERITT. Absolutely no, sir. As soon as these surplus supplies are sold, we can possibly take care of everything that we need in Government-owned storage.

The CHAIRMAN. How much of the amount you are asking for is for the rental of leased storage?

Capt. EVERITT. \$1,505,877.92, which covers the rental of in the neighborhood of about 11,000,000 square feet.

The CHAIRMAN. How much rented storage space did you have at the time of the signing of the armistice, November 11, 1918?

Capt. EVERITT. We did not have this amount, sir. I could not state the exact amount we had at that time, without looking it up. I can get those figures, and insert them in the record, but the storage has increased since the signing of the armistice by the receipt of supplies from demobilization in the Army reserve depots, and the Army supply bases. The leasing of the additional storage has been necessary, due to the taking over by the Government an immense

amount of supplies, on the cancellation of contracts, adjustments thereof, and certain material returned from overseas, particularly ordnance.

The CHAIRMAN. Will you kindly put in the hearings the amount of storage you had, Government owned in one item and leased in another item, at the time you had the greatest amount of storage, and put in also the date when it was?

Capt. EVERITT. Yes, sir. The following tabulation will give the information requested by the House Military Affairs Committee.

	Warehouse.	Shed.	Total.
Nov. 11, 1918, estimated:			
Leased.....	\$6,500,000	\$1,500,000	\$8,000,000
Government owned.....	18,000,000	2,000,000	20,000,000
Total.....	24,500,000	3,500,000	28,000,000
July 1, 1919, greatest amount:			
Leased.....	9,977,547	1,915,283	11,892,830
Government owned.....	35,707,858	8,084,532	43,792,390
Total.....	45,685,405	9,999,815	55,685,220
February 1920, amount:			
Leased.....	5,632,798	435,098	6,067,896
Government owned.....	35,707,858	8,084,532	43,792,390
Total.....	41,340,656	8,519,588	49,860,244

Mr. McKENZIE. Captain, I assume you are quite familiar with the whole situation as to the stores on hand. I believe you stated there was \$2,000,000 worth of stuff, but that was not all, was not that the fact?

Capt. EVERITT. The total supplies in all places.

Mr. McKENZIE. I want to ask what your judgement would be about expediting the sale of some of this material. Do you believe that if we would turn some of it over to the Army officers, and retire the civilian auxiliary bodies that have been assisting the Army officers to sell it, that the sale would be expedited?

Capt. EVERITT. I would prefer not to answer that question. That involves a question of policy, and I think you will have to go higher than me.

Mr. McKENZIE. Excuse me, Captain.

Mr. GREENE. May I ask the captain a question which I hope will not be considered delicate and not involving a question of policy. Previous to the war we did not have much demand for storage facilities for reserve supplies?

Capt. EVERITT. Yes, sir.

Mr. GREENE. I will correct that. The demand was there for a limited need, but we did not furnish it?

Capt. EVERITT. No, sir.

Mr. GREENE. Now, then, if we are to start out by retaining a part of this so-called surplus, as our proper, normal reserve, in addition to the space needed to store the normal supply of stores we will have to make an increase in the amount of storage space, over that which we carried before the war, will we not?

Capt. EVERITT. Yes, sir. It will depend upon the amount of reserves, though. Of course, the space will depend upon the reserve,

naturally. We now have government owned space which possibly would take care of that reserve when the surplus is all sold.

The CHAIRMAN. The increase of the regular Army since then will cause you to secure more space than you had during the war?

Capt. EVERITT. No, sir. I believe we have enough Government owned space to care for all reserve supplies under the Quartermaster General, when the surplus is sold.

Mr. GREENE. But I wanted to see if we can not hope to get back to the pre-war space, because it seems to me to be the part of wisdom, if we have got on our hands; however we got it; an unusual bulk of supplies, to save a part of it for a reserve, which will undoubtedly add to the demand for storage anyway to be carried as the normal supply and reserve of the Army, regardless of the war surplus?

Capt. EVERITT. As I stated sir, our present storage facilities will not demand additions to care for reserve supplies.

Mr. GREENE. The question is one of policy as to how much of the accumulations should be properly kept as the reserve, and then how much of the remainder should be disposed of as surplus.

Capt. EVERITT. Yes, sir.

Mr. GREENE. That you do not determine?

Capt. EVERITT. No, sir; we do not determine that. That is determined in a measure by the General Staff. That is a matter of policy. They publish pamphlets from time to time on that. One came through not long ago. I understand their policy is that the reserve to be carried is the reserve which will supply the strength of the Army, with the National Guard. I think it is a million reserves, until such time as the particular item can be replaced by manufacture or purchase. That, in a rough way, is my understanding of it.

The CHAIRMAN. During the war in Europe they had provision zones, as I recall. In the zone right at the front they had supplies for 30 days. In the intermediate zone, for 60 days, I think, and then down at the seaboard, for 90 days. You do not attempt to do anything of that kind in this country?

Capt. EVERITT. No, sir.

The CHAIRMAN. There is no need for that?

Capt. EVERITT. No, sir. In regard to perishable supplies, we have to watch our stocks very carefully, because they are liable to deterioration, and they have to be turned over ever so often, but in regard to nonperishable supplies it is simply a matter of warehousing and taking care of the material in storage.

The CHAIRMAN. Is the labor civilian labor?

Capt. EVERITT. Yes, sir; all civilian labor.

The CHAIRMAN. All of it?

Capt. EVERITT. With the exception of a few officers to supervise the work, but it is practically all civilian.

The CHAIRMAN. What do you pay your civilian employees in that branch of the service?

Capt. EVERITT. Maj. Barnes, from the personnel division, will answer that question.

The CHAIRMAN. What is the average salary paid?

Maj. BARNES. About \$1,268 per annum.

The CHAIRMAN. Do these civilians work with the enlisted men to any extent?

Capt. EVERITT. No, sir; there are no enlisted men at these depots at all. During the war they were operated, Mr. Chairman, by soldiers, by labor battalions, as we called them, but since the armistice they have been operated entirely by civilians.

The CHAIRMAN. Is there anything else?

Capt. EVERITT. No, sir, I have nothing, sir, unless there are some questions the committee desires to ask.

Gen. LORD. Mr. Chairman, Gen. Rogers, the Quartermaster General, and Director of Purchase and Storage, will be the next.

The CHAIRMAN. Page 20 is the beginning of it, I understand.

Gen. LORD. Yes. I think Gen. Rogers perhaps would like to make some general statement to the committee.

The CHAIRMAN. Very well, Gen. Rogers, we will be glad to hear any general statement you desire to make to the committee.

STATEMENT OF MAJ. GEN. H. L. ROGERS, QUARTERMASTER GENERAL.

Gen. ROGERS. Mr. Chairman, I have no general statement to make that I know of. I did not expect to come before the committee at all. Last year I was informed that I would not be called before the committee.

The CHAIRMAN. We are very glad to see you here.

Gen. ROGERS. I am very glad to see you gentlemen, but I was not ordered before the committee until last night about 5 o'clock, so I am not prepared at all in any way, as far as that goes. I would be glad to answer any questions that I can answer.

The CHAIRMAN. Well, what is the Quartermaster Department doing in the way of disposing of surplus material? Are you finding the customers and securing the prices for the benefit of the Director of Sales?

Gen. ROGERS. Yes, sir; I have a large surplus property division, and they ascertain the amount of storage of our surplus, and obtain prices, and recommend prices to the Director of Sales, who is a civilian as you know under the direction of the Division of Purchase, Storage and Traffic of the General Staff, and he either approves and authorizes the prices, or changes the prices, and then the property is offered for sale, but we in most cases dispose of it ourselves, but in some cases the Director of Sales has made the sale himself.

The CHAIRMAN. Have you a sufficient organization in the Quartermaster Department that could enable you to find the customers, agree upon the prices, and make the sales, without the interposition of any civilian or other personnel than the men in your department?

Gen. ROGERS. I do not know how to answer that question, Mr. Chairman. The matter of disposing of property belonging to the War Department, I think, was handled by the Secretary of War, and I think he recommended to Congress that a civilian establishment be set up, and I would prefer not to make comment on that, sir.

The CHAIRMAN. I will not ask you to make any comment upon it.

Gen. ROGERS. Well, perhaps you misunderstood me. If I should reply to your question, sir, it might imply that the Secretary of

War's decision which fixed our civilian establishment, might—you see what I mean?

The CHAIRMAN. I see what you mean, and I will not press the question.

Mr. McKENZIE. May I state it in this way and see what the general may have to say? Of course, at the time of the signing of the armistice, and during the demobilization of the Army, the old commissioned personnel of the Army was engaged with the many manifold duties pertaining strictly to the military establishment. Now, months have elapsed, the Army has been demobilized, the Regular Establishment has settled down to a sort of peace-time basis, we are providing in the reorganization bill on a strength of 18,000 officers for the Regular Establishment, and it seems to me that the situation is very different. I can understand how at that time the Secretary of War might well feel that it would be better to have some civilian head or auxiliary organization to handle this proposition, but it does seem to me that the work that was necessary to be performed by that same organization in outlining a plan, and all that sort of thing, has been accomplished, and the situation to-day is entirely different, and I want to ask whether or not at this time with the other many activities taken from the shoulders of the officers of the Army, they should not take up this work and go on with it?

Now, you may not want to express an opinion on that, but the situation is entirely different.

Gen. ROGERS. I am willing to answer that in a general way, sir. I would say that I have never seen anything yet that Congress or the President has delegated to the Army to carry out that has not been carried out.

Mr. McKENZIE. You understand I am not criticizing the Secretary of War for doing what he did.

Gen. ROGERS. I understand.

Mr. McKENZIE. But to-day we are facing a different situation.

Mr. GREENE. Do you mind putting in the record, General, some sketch or outline of your policy in determining, so far as your functions in it go, what of the stores now on hand, the accumulation from the war, as well as your recent purchases, are to be laid, first to the normal supply of the Army for the current year—that which is properly to be held, or wisely to be held out of the accumulation for our reserve (that is as brought out in its military sense, not in our practice, because we never had any practice), and then, that which is by the result of those two processes passed into surplus for sale.

Gen. ROGERS. I will be glad to do that.

Mr. GREENE. Just an outline that will enable us to answer some questions, because it is manifest, with such a tremendous accumulation of supplies assembled in such a comparatively short time, and of such a miscellaneous character, it must take some time to sort that out, it must take some time to devise a policy for its disposition, and I want to know what, if any, policy has now been arrived at in which you are of your own responsibility functioning.

Gen. ROGERS. Very good.

Mr. GREENE. I do not care about the statistical part, but the policy, generally.

NOTE.—Answering Mr. Greene's question as above:

The latest approved policy governing the amount of equipment and supplies to be kept on hand for current maintenance and a war reserve for the Regular Army, Na-

tional Guard, and Reserve Officers' Training Corps provides, after deducting any equipment or supplies in the hands of the National Guard and Reserve Officers' Training Corps, the following:

(a) Supplies of ordinary commercial type which can be obtained within 30 days. No reserve to be maintained.

(b) Supplies requiring more than one month to produce must be kept on hand in quantities necessary to provide the initial equipment for the expansion of the peace army to one complete army at war strength plus the necessary additions thereto.

(c) Supplies requiring more than six months and less than a year to produce should have an additional reserve in the amount needed to maintain the complete Army at war strength for six months under war conditions.

(d) Supplies requiring over a year to produce should similarly be kept on hand in the amount needed to maintain the complete Army at war strength for one year under war conditions.

In accordance with the policy as above, supplies in excess of the requirements as established are declared surplus and are sold from time to time as suitable prices are developed. The sales of quartermaster supplies to date, exclusive of wool, exceeds \$200,000,000. It is not the policy to sell at this time new articles of the uniform, though the quantity of certain sizes may be greatly in excess of the requirements for such sizes.

Mr. McKENZIE. I want to ask the General two or three questions. In the first place, General, I want to ask you if there is any particular shortage in the War Department of any equipment necessary to take care of an army of 175,000 men for the next year?

The CHAIRMAN. Quartermaster equipment?

Mr. McKENZIE. Quartermaster equipment, the stuff you have purchased, and you will be, I understand, the purchasing agent for all the general equipment.

Gen. ROGERS. The main shortages, Mr. McKenzie, are due to the question of sizes, mostly, in uniforms and shoes. We are purchasing quite a large quantity of shoes, and it has been necessary since our return from France to give orders to purchase, and for our own manufacture, both, small sizes of blouses and breeches, due to the fact that possibly the orders originally were not given just as exact as they should have been, but also due to the fact that the men we are getting into the Army at the present time are of a much smaller size than those that originally went into the service.

Mr. McKENZIE. Can you put in the record, General, a statement showing the number of uniforms on hand?

Gen. ROGERS. Yes, sir.

The CHAIRMAN. Would it not be possible, Mr. McKenzie, to take up that matter at the time we reach the item of clothing?

Mr. McKENZIE. All right. You will put that in there?

Gen. ROGERS. Yes.

The CHAIRMAN. I was going to begin on the items, and then we can follow with questions to much better advantage.

Mr. McKENZIE. I understood the general was going to leave.

The CHAIRMAN. Was the general going away?

Gen. ROGERS. That is entirely up to the committee.

The CHAIRMAN. We certainly would like to have you give us information on these matters. The first item is for "Subsistence of the Army."

Gen. LORD. Mr. Chairman, would it be possible to take up incidental expenses first? I understand that Col. Barrett has that item, and he has to go. That is on page 25.

The CHAIRMAN. Very well, we will take up that item first, on pages 25 and 26.

Gen. LORD. The amounts that Col. Daly will recommend under the four strengths have been approved by the Secretary of War.

The CHAIRMAN. Col. Daly, will you kindly give us the figures on each one of these strengths? I think the first one is predicated on an Army of 299,000 men.

Col. DALY. The total of the estimate, based on an army of 299,000 men, is \$15,060,865; on an army of 225,000 men, \$12,838,397; on an army of 200,000 men, \$11,470,447; on an army of 175,000 men, \$10,213,691.

Now, the estimate for the least number of men is about \$14,000,000 less than the amount provided for the current year, and for the greatest number of men about \$9,000,000 less than the appropriation for this fiscal year.

The CHAIRMAN. And about \$14,000,000 less than that which you are asking for in the tentative draft of this bill?

Col. BARRETT. Yes, sir.

The CHAIRMAN. How many men were you calculating to furnish with subsistence for the \$24,000,000 item, as it appears in this tentative draft?

Col. DALY. That was based on an army of 576,000.

The CHAIRMAN. What is the ration cost to-day for the Army?

Col. DALY. About 52 cents, sir.

The CHAIRMAN. It has come down a little?

Maj. HANNAY. I understand it is about 54 cents now.

The CHAIRMAN. How much was it during the war?

Maj. HANNAY. Fifty-one and a fraction, Mr. Chairman.

The CHAIRMAN. Well, that goes back to subsistence?

Col. DALY. Yes, sir.

The CHAIRMAN. And we will take it up there.

In this item of incidental expenses there was formerly carried quite a sum for one of the services—the construction service—which is not included in this at all.

Col. DALY. Nor is the transportation; but the finance service is included.

The CHAIRMAN. Can you correct this item for us so that it will show how much is intended for every one of the branches of the Army that receives funds from this item?

Col. DALY. There are only two branches, Mr. Chairman, that will have funds under this appropriation; that is the Quartermaster General, the Director of Purchase and Storage, and the Director of Finance. The amount that is in here for the Director of Finance is \$2,086,000. That remains constant through the four strengths. There has been no attempt to make any change in it—to the strength of the Army.

The CHAIRMAN. And the balance of the amount would go to the Quartermaster General's Department?

Col. DALY. Yes, sir.

The CHAIRMAN. Is there anything else you desire to say about that?

Col. DALY. There is one item here. Of course, the item of recruiting will be handled largely by The Adjutant General.

The CHAIRMAN. Yes.

Col. DALY. The amount that is included for recruiting for each strength is based upon an estimate made by The Adjutant General.

The CHAIRMAN. How much is he asking for the recruiting service?

Col. DALY. For an Army of 175,000 he is asking for \$493,500; for an Army of 200,000, \$564,000; for an Army of 225,000 men, \$634,500; for an Army of 299,000 men, \$846,000. That is a per capita of \$2.82 throughout.

The CHAIRMAN. The same per capita, whether for a large Army or a smaller force?

Col. DALY. Yes; that per capita has been applied throughout these strengths.

The CHAIRMAN. Two dollars and how much?

Col. DALY. \$2.82.

The CHAIRMAN. How does that compare with the per capita cost prior to the war?

Col. DALY. It is higher. The per capita cost prior to the war, in 1916, was \$1.73.

The CHAIRMAN. What is the cause of the increase? That is a \$1.10 increase.

Col. DALY. The principal cause is the large increase in the cost of bill posting and advertising. All of that has gone up, and after war was declared and the draft law became effective all of the recruiting stations were closed, and the supplies and equipment of the offices disposed of by being turned into the zone offices and utilized by issue, so it is necessary to reequip the offices and to establish many new offices, because an intensive recruiting campaign is necessary, and it is covering a large field.

The CHAIRMAN. They have secured about 20,000 men during the period between January 16 and March 31, have they not?

Col. DALY. I think so. I think I saw that statement somewhere.

The CHAIRMAN. They expected to get, or they started out to get, 84,000 men.

Mr. GREENE. You say, Colonel, that a part of this money is to be used to equip the recruiting stations?

Col. DALY. Yes, sir.

Mr. GREENE. What have they been using in this last drive this spring?

Col. DALY. They have been reequipped, but they are extending and expanding their activities. They are establishing new stations, and will establish new stations in their recruiting campaign.

Mr. GREENE. Would it be much trouble to put in the record the details as to what constitutes the expense making up this per capita of \$2.82?

Col. DALY. I have that all worked out here, and if the Chairman so desires, I will pass over to the clerk the data. That is all worked out, the detailed expense under each item.

The CHAIRMAN. We will be glad to have that information in the record, and if you will kindly give the data to the reporter, we will insert it in the record.

(The matter referred to is as follows:)

The funds asked for will be required for purposes and in amounts as follows:

	175,000 men.	200,000 men.	225,000 men.	299,000 men.
Baths.....	\$5,250.00	\$6,000.00	\$6,750.00	\$8,970.00
Bill posting and posters.....	199,500.00	228,000.00	258,500.00	340,860.00
Advertising and incidentals.....	265,125.00	303,000.00	340,875.00	452,985.00
Ice.....	3,500.00	4,000.00	4,500.00	5,980.00
Laundry.....	12,250.00	14,000.00	15,750.00	20,930.00
Removal of garbage and ashes, janitor, and other services.....	7,000.00	8,000.00	9,000.00	11,960.00
Alteration white clothing.....	875.00	1,000.00	1,125.00	1,465.00
Total.....	493,500.00	564,000.00	634,500.00	848,180.00

Gen. LORD. Mr. Chairman, the Adjutant General, I have no doubt, will be glad to come before the committee relative to the recruiting, if you should decide later that you needed him, and then later I will submit some additional information on this subject that will be informative, data that I have prepared in connection with this item.

The CHAIRMAN. The item of incidental expenses?

Gen. LORD. The item of incidental expenses.

The CHAIRMAN. Very well. What is next?

Gen. LORD. Subsistence.

The Chairman. On page 20?

Gen. LORD. On page 20 of the bill. The amount recommended to the Secretary of War, or the amount that has been approved by the Secretary of War, under "Subsistence," for the four strengths, is as follows: On an enlisted strength of 299,000, \$71,215,960; on an army of 225,000 enlisted men, \$63,684,685; for an army of 200,000 men, \$55,719,720; for an army of 175,000 men, \$48,754,755.

Maj. J. R. R. Hannay will further discuss this item.

STATEMENT OF MAJ. J. R. R. HANNAY.

Maj. HANNAY. There has been some slight general reduction, Mr. Chairman, as follows: For 299,000 men the total is \$71,206,470; for 225,000 men it is \$60,761,931; for 200,000 men it is \$54,804,379; for 175,000 men it is \$48,835,741, a slight bit more than the other. There is a general reduction.

The CHAIRMAN. You arrived at those figures on a per capita basis?

Maj. HANNAY. We have figured on a per capita basis, Mr. Chairman, but the per capita basis varied with the strength. In other words, the overhead figure with a small army is a greater per capita cost than for a large army. We have those per capitas. On an army of 299,000 men the per capita cost per man per year is \$238.15; on an army of 225,000 men it is \$240; on an army of 200,000 men it is \$241; on an army of 175,000, it is \$243.

The CHAIRMAN. We got the information, but it might be well again to secure it at this point, as to the cost of the ration at present in the Army.

Maj. HANNAY. Fifth-four and one-fourth cents.

The CHAIRMAN. Do you know how much it was during the war period?

Maj. HANNAY. Fifty-one and sixty-seven hundredths cents.

The CHAIRMAN. So that it has increased since the close of the war?

Maj. HANNAY. It has; yes, sir.

The CHAIRMAN. It has been increasing constantly, I know, for the last 10 years.

Maj. HANNAY. Yes, sir; it has.

The CHAIRMAN. For the last eight years, anyhow.

Maj. HANNAY. On general supplies, I noticed the statement of Secretary Garfield, in considering the demands of the coal miners, when he stated the general cost of supplies, and there was an increase of between 78 and 79 per cent. We have only added 5 per cent for the ensuing year to the cost of our rations.

The CHAIRMAN. Now, we will appreciate it if you will take up the paragraph item by item.

Maj. HANNAY. The first item is supplies for troops, involving all ration articles for troops, enlisted men. For 175,000 men it is \$34,636,165. Mr. Chairman, do you desire me to read through those figures, or shall I put them in the record?

The CHAIRMAN. Put those in the record.

Estimate for subsistence for 1921, various strengths.

Item No.	Item name.	175,000 men.	200,000 men.	225,000 men.	299,000 men.
101-A.....	Supplies for troops.....	\$34,636,165.30	\$39,358,958.73	\$44,067,896.70	\$52,298,679.58
101-B.....	Supplies for civilian employees.....	39,800.52	44,948.84	50,097.17	59,305.74
101-C.....	Supplies for hospital matrons.....	5,940.38	5,940.38	5,940.38	5,940.38
101-D.....	Supplies for student nurses.....	87,917.55	99,006.25	103,956.56	113,857.19
101-I.....	Supplies for general prisoners.....	189,101.94	189,101.94	189,101.94	189,101.94
101-J.....	Supplies for food chests.....	25,997.41	25,997.41	25,997.41	25,997.41
101-K.....	Supplies for flying cadets.....	438,000.00	438,000.00	438,000.00	438,000.00
102-A.....	Subsistence of masters of transports.....	11,406.25	11,406.25	11,406.25	11,406.25
102-B.....	Subsistence of officers of transports.....	232,687.50	232,687.50	232,687.50	232,687.50
102-C.....	Subsistence of crews of transports.....	1,111,425.00	1,111,425.00	1,111,425.00	1,111,425.00
103.....	Hot coffee for troops traveling.....	20,202.75	22,863.60	25,524.45	30,156.30
104-A.....	Meals for recruiting parties.....	924,180.00	924,180.00	924,180.00	924,180.00
104-B.....	Meals for applicants for enlistment.....	675,000.00	675,000.00	675,000.00	675,000.00
106-A.....	Stores for sale to officers.....	75,000.00	75,000.00	75,000.00	75,000.00
106-B.....	Stores for sale to troops.....	200,000.00	200,000.00	200,000.00	200,000.00
106.....	Meals for competitors at National Rifle Match.....	12,000.00	12,000.00	12,000.00	12,000.00
	Commutation of rations:				
107-A.....	Cadets at U. S. Military Academy.....	512,460.00	512,460.00	512,460.00	512,460.00
107-B.....	Men on furlough.....	805,308.25	910,602.00	1,015,995.75	1,200,485.00
107-C.....	Men traveling.....	5,417,257.00	6,126,133.50	6,835,574.00	8,075,990.00
107-D.....	Female nurses detached.....	18,688.00	20,440.00	21,608.00	22,776.00
107-E.....	Men to contest at Army competitions.....	14,512.50	14,512.50	14,512.50	14,512.50
107-F.....	Nurses on leave.....	17,465.25	19,673.50	21,279.50	24,491.50
107-G.....	Applicants for enlistment traveling.....	2,250.00	2,250.00	2,250.00	2,250.00
107-H.....	General prisoners traveling.....	9,033.75	9,855.00	10,676.25	13,140.00
107-I.....	Nurses at hospitals.....	272,983.54	307,002.52	332,586.07	383,753.15
107-J.....	Men sick in hospitals.....	2,712,325.28	3,051,365.93	3,408,709.77	4,054,514.63
107-L.....	General prisoners sick in hospitals.....	12,474.79	12,474.79	12,474.79	12,474.79
107-M.....	Warrant officers of mine planters.....	66,247.50	66,247.50	66,247.50	66,247.50
108.....	Advertising.....	1,321.72	1,498.83	1,671.97	1,975.97
108.....	Prizes for school graduates.....	1,050.00	1,050.00	1,050.00	1,050.00
110.....	Other necessary expenses, etc.....	109,458.01	120,512.72	130,282.99	150,918.45
110-A.....	Customs duties.....	5,000.00	5,000.00	5,000.00	5,000.00
110-B.....	Losses on subsistence stores.....	173,180.88	198,794.79	220,339.42	261,493.40
	Total.....	48,835,741.02	54,804,379.48	60,761,931.87	71,206,470.17
	Per man per year.....	243.51	241.64	240.12	228.15

Maj. HANNAY. I will just read the estimates right straight down, if that is satisfactory.

The CHAIRMAN. Yes; and insert them in the hearing.

Maj. HANNAY. Yes, sir. Supplies for civilian employees, \$39,800; hospital matrons, \$5,940; student nurses, \$87,917; general prisoners, \$189,101. Of course, that includes their rations. They get the same ration as other enlisted men. That is the total for troops.

The CHAIRMAN. The general prisoners are being released in large numbers? What I mean is, you have more general prisoners than you had at any other time, as a result of the war?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. But they are being released, I understand, so that the number of general prisoners at the close of the fiscal year 1921 will be considerably reduced, I understand.

Maj. HANNAY. They will, Mr. Chairman. The Adjutant General informs us that he estimates that the number for the fiscal year 1921 will be 12,000, and it is based on those figures that we are putting in this estimate.

The CHAIRMAN. An average of 12,000?

Maj. HANNAY. It will average 12,000

The next item is food chests, \$25,997. This item of food chests has been developed during the war, for hospital ambulances—for the care of the sick while being transported from the battle fields; they provide certain containers with certain food for taking care of the sick. We have found they were very efficacious as developed in France, and the Medical Corps is very anxious to get proper equipment for the Army in case of any emergency.

The CHAIRMAN. Well, your department would supply those?

Maj. HANNAY. We would supply them; yes, sir. It is a part of subsistence. I can give you the items they would contain, if you would be interested in it.

The CHAIRMAN. Yes.

Maj. HANNAY. In the chests there would be supplies of beef extract, cocoa, coffee, hard bread, pepper (black), soup (assorted), and tea, put up in field containers.

Mr. GREENE. Do we understand that you not only keep the container, but that you stock it up with these various food products?

Maj. HANNAY. Yes, sir.

Mr. GREENE. And then it is put up on the shelf somewhere, waiting for an emergency?

Maj. HANNAY. Yes, sir. It is a special chest, and they are all hermetically sealed articles, so that they are cared for, and they would not deteriorate. It is just a sufficient amount which would be of an emergency character. That would be the nature of it, so that in an emergency we would not have to get it.

Mr. GREENE. Is it a patented article?

Maj. HANNAY. No, sir; it is not a patented article. It has been developed during the war.

Mr. FIELDS. How long would the food keep without deterioration?

Maj. HANNAY. I do not know. I could put that in the record.

Mr. MCKENZIE. The point that strikes me is that in this country of ours, if you had these containers, it seems to me that it would not take any very great length of time to fill them up with fresh food.

I think they are all right, but if you put food into them and store it away, perhaps after seven years you would have to refill the containers.

Maj. HANNAY. The intention is, Mr. McKenzie, not to buy this food, but to buy the chests and to buy the food as it is needed. In case the appropriation is not all needed it will be turned into the Treasury. The intention is, in case of need, to buy such as is called for by the Medical Corps. They have made this estimate.

The CHAIRMAN. How many of the chests do they want you to procure?

Maj. HANNAY. We have no number, Mr. Chairman, only the quantity in money value of subsistence stores which the Surgeon General would ask for.

The CHAIRMAN. Just the contents?

Maj. HANNAY. Yes.

Mr. FIELDS. What is the estimate for this?

Maj. HANNAY. \$25,997.

Mr. FIELDS. And what is the sale price?

Maj. HANNAY. They did not give us that.

The CHAIRMAN. I wish you would get that and put it in the record.

Maj. HANNAY. All right.

NOTE.—It is estimated that the cost of the food chests is \$1.10 each. There are, however, a sufficient number of these chests on hand to meet the requirements for the fiscal year 1921 and this office has been informed that the Surgeon General is not asking for any funds for the procurement of same.

List of supplies required for each chest:

9 jars beef extract, at 47 cents.....	\$4. 23
12 tins cocoa, at 13½ cents.....	1. 65
2 tins ground coffee, at 90 cents.....	1. 80
8 cartons hard bread, at 13½ cents.....	1. 08
18 tins milk, evaporated, at 11 cents.....	1. 98
1 ounce pepper, black, at 2 cents.....	. 02
12 tins soup, assorted, at 10 cents.....	1. 20
1 pound tea.....	. 75
Total.....	12. 71

Mr. FIELDS. I think it would be well to put in the record the cost of the chest and the cost of filling it, as separate items.

Maj. HANNAY. I think I gave the wrong impression, Mr. Chairman. The chest itself is not included in this. This is just for the things to go in the chest. The Medical Corps are providing the chests.

The CHAIRMAN. I understood you to say that covered the chest.

Maj. HANNAY. If I said it did, I was wrong.

Mr. McKENZIE. Does the Medical Corps buy the chests?

Maj. HANNAY. They are furnishing the chests, and we are furnishing the supplies to go in them, subsistence articles, out of subsistence for the Army.

Mr. McKENZIE. Of course, under the reorganization bill that we just passed, they will continue to buy the chests, because they are so-called technical articles, would they not?

Maj. HANNAY. Yes, sir; we would buy the contents, Mr. McKenzie, as subsistence articles, under our subsistence appropriation.

Mr. McKENZIE. You would buy the food, but I am speaking of the chests.

Maj. HANNAY. They would buy the chests.

Mr. MCKENZIE. With regard to the chests, of course, you do not know how many thousand of those chests they have on hand or intend to buy?

Maj. HANNAY. No, sir; we do not.

Mr. HULL. They would not, under the reorganization bill, buy them.

The CHAIRMAN. They would, if it were determined that they were technical supplies.

Maj. HANNAY. Yes, sir.

The CHAIRMAN. Not common to two or more branches of the service.

Mr. GREENE. Just what is contemplated by the storage of these articles? That is, what kind of an emergency hospital use would they anticipate?

Maj. HANNAY. It would not be contemplated, Mr. Greene, to buy these until the Medical Corps calls on us for them, but we must provide some fund to be able to meet their needs, when they call for them.

Mr. GREENE. I understand, but what I am getting at is what the Medical Corps has in mind by the setting out of this sort of preserved food for any hospital emergency, what kind of an emergency?

Maj. HANNAY. Any ambulance service, these chests go with the ambulance to furnish the sick with food.

Mr. GREENE. It is a field supply, then?

Maj. HANNAY. Yes, sir; where any ambulance service would be needed.

The next item is flying cadets, \$438,000, for subsistence of flying cadets. Subsistence of masters of transportation, \$11,406; subsistence of officers of transports, \$232,687; subsistence of crews of transports, \$1,111,425; hot coffee for troops traveling—

The CHAIRMAN. Before you leave that transport item, how many transports are you calculating on in your figures?

Maj. HANNAY. We are figuring on the number of personnel which the Transportation Service furnished us, Mr. Chairman. They requested that we provide subsistence for 25 masters, 26 first officers, and so on, enumerating all of the personnel which is provided for in these separate estimates of the Transportation Service. The 25 masters would indicate, of course, 25 ships.

The CHAIRMAN. The Chief of Transportation told us that they have 19 ships, and that they expected to continue 11 in service and dispose of the others, and that we ought to dispose of them soon, so that we would ask you to put into the hearing all the personnel that you are providing for, if you please.

Maj. HANNAY. Yes, sir.

Estimate for subsistence for officers and crews of Army transports for the fiscal year 1921.

Saloon mess (at \$1.25 per day):

25 masters.
 26 first officers.
 26 chief engineers.
 25 first assistant engineers.
 25 chief stewards.
 24 quartermaster agents.
 24 quartermaster clerks.

175 total.

Ship's officers' mess (at \$1 per day):

25 second officers.
 26 third officers.
 24 fourth officers.
 21 second assistant engineers.
 17 second assistant engineers, senior.
 18 second assistant engineers, junior.
 65 third assistant engineers.
 1 third engineer.
 13 junior engineers.
 15 fourth assistant engineers.
 1 fourth engineer.
 24 deck engineers.
 28 refrigerating engineers.
 23 assistant refrigerating engineers.
 25 electricians.
 20 assistant electricians.
 26 plumbers.
 3 launch engineers.
 24 freight clerks and embalmers.
 1 veterinarian.
 25 chief wireless operators.
 25 assistant wireless operators.

450 total.

Ship's petty officers' mess (at 70 cents per day):

25 watchmen.
 26 boatswains.
 25 carpenters.
 128 storekeepers.
 19 yeomen.
 24 boatswain's mates.

Ship's petty officers' mess (at 70 cents per day):

13 carpenter's mates.
 135 wheelmen.
 58 masters at arms.
 14 assistant plumbers.
 71 water tenders.
 166 oilers.
 1 machinist.
 78 stewards.
 25 chief bakers.
 56 bakers.
 25 chief butchers.
 35 butchers.
 61 messboys.
 99 messmen.
 168 cooks.
 85 pantrymen.
 31 dishwashers.
 29 porters.
 24 silvermen.
 24 barbers.
 24 janitors.
 24 stewardesses.
 659 waiters.
 79 bellboys.
 31 bathroom men.

2,262 total.

Sailors' and firemen's mess (at 70 cents per day):

174 deck boys.
 528 firemen.
 302 coal passers.
 3 wipers.
 39 scullions.
 906 seamen.
 134 messboys (sailors' and firemen's).
 1 firemen's messman.
 1 sailors' messman.

2,088 total.

The above estimate was furnished by the Transportation Service, dated August 11, 1919, to be used in estimate on appropriation for subsistence of the Army.

The CHAIRMAN. Because, if they have only 19 vessels, I do not see why they want subsistence for 25 masters.

Maj. HANNAY. Well, I presume, Mr. Chairman, that they call the master of one of those large ocean-going tugs a master, so while that is not a transport he would probably come under this designation. That is an assumption, but I will get that for you, if you desire.

The CHAIRMAN. We will want to look into it a little further, but the details are very interesting, so we will ask that you put them in the hearing.

Maj. HANNAY. The next item is meals for recruiting parties. I have read the item for hot coffee for troops traveling.

The CHAIRMAN. You started to read it.

Maj. HANNAY. Hot coffee for troops traveling is the next item, \$20,202; meals for recruiting parties, \$924,180; meals for applicants for enlistment, \$675,000; stores for sale to officers, \$75,000; stores for sale to troops, \$200,000. Of course, this item, \$275,000, is the

total of the two items. There has been such a small amount allowed by Congress heretofore which practically covers dead stock, so to speak, that is, stock that does not move, not that it is lost or spoiled—but our sales amount to approximately \$8,000,000 a quarter, or in that neighborhood.

The CHAIRMAN. Well, that money is turned back into the fund?

Maj. HANNAY. That comes back. It is constantly reverting.

The CHAIRMAN. It is a revolving fund?

Maj. HANNAY. A revolving fund; yes, sir.

Mr. GREENE. Does it literally revolve?

Maj. HANNAY. It revolves, yes. The funds are turned back and made available for two fiscal years.

The CHAIRMAN. To purchase new supplies?

Mr. GREENE. But does it literally purchase as many new supplies as we sold to get that money?

Maj. HANNAY. There is a small item for wastage. I have that down below here.

Mr. GREENE. Is it a question of wastage, or is it a question of the difference in cost between what the Government put into it and the return for that which is sold?

Maj. HANNAY. The officer and the enlisted man pays for the articles, at the cost to the Government, but, of course, it may not cover the cost in future sale. The future man pays for it in the end.

Mr. GREENE. I do not mean that. For instance, an officer or man trading at the post pays what is said to be the cost to the Government for the article.

Maj. HANNAY. Yes, sir.

Mr. GREENE. Flat?

Maj. HANNAY. Yes, sir.

Mr. GREENE. Does he pay the intervening charges for transportation?

Maj. HANNAY. He does not; no, sir.

Mr. GREENE. And warehousing?

Maj. HANNAY. No, sir.

Mr. GREENE. Or any other handling that comes in?

Maj. HANNAY. No, sir.

Mr. GREENE. It must be a constantly diminishing fund to that extent, so eventually it would disappear.

Maj. HANNAY. It is to that extent; yes, sir.

The CHAIRMAN. That is what, this item of \$275,000?

Maj. HANNAY. No, sir; this item covers—for instance, at the beginning of the year we have to make procurements for our sales stores, and there is a certain stock that carries over that is dead, and it is like any other business house. They generally set aside a small sum of money annually to carry on their business to cover stock that does not sell, so to speak.

The CHAIRMAN. What will you eventually do with that stock, sell it at reduced prices; how do you get rid of it?

Maj. HANNAY. If it spoils, it is acted on by a board of survey, but that does not generally occur. This money, if any is available, may sometimes be used, Mr. Chairman, of course, to buy stock, which may eventually go to the soldier as a part of his ration.

The CHAIRMAN. Of course, the man in business, when he finds that he has a large quantity of a certain material that does not find ready sale, advertises a reduction sale.

Maj. HANNAY. Yes, sir.

The CHAIRMAN. Which causes his goods to move on in that way?

Maj. HANNAY. We do the same thing.

The CHAIRMAN. Do you do anything of that kind?

Maj. HANNAY. Yes, sir; we call for a board to appraise it, and sell it at a reduced rate, if it is fit for consumption.

The CHAIRMAN. We had a discussion on the floor the other day about commissary sales. I remember some provision of law which authorized your department to sell to the other departments of the Government at cost price, plus charges for transportation, storage, and 10 per cent profit. Are you familiar with that provision?

Maj. HANNAY. Yes, Mr. Chairman, that is the law. That 10 per cent is to cover everything.

The CHAIRMAN. That is only on the material that the War Department sells to some other branch of the Government.

Maj. HANNAY. To some other branch of the Government, yes.

The CHAIRMAN. When it sells to an individual in the Army, it makes no profit at all, and there is not included in the cost to the officers of the Army, the cost of transportation or storage?

Maj. HANNAY. No, sir, it is not.

The CHAIRMAN. So that really the material is being sold at less than cost to the Government?

Maj. HANNAY. Yes, sir, at a slight amount less than the cost to the Government.

Mr. GREENE. That suggests another instance where, in the re-constituted Army appropriation bill, that we have been looking forward to so long, we should bring up into an item like this those other charges which, I think it has been uniformly found, are probably taken care of in other items in the bill. This item, standing alone, does not represent the real economic status of this transaction to the Government.

Mr. FIELDS. It does not represent the real cost of the article laid down.

Mr. McKENZIE. I would like to ask the major, as a matter of administration to remove all criticism, if an additional per cent of, say, 5 per cent on the actual cost of the article, was added in all the different posts of the country, including Alaska and the Philippines, making it uniform everywhere, if that would not cover all the expenses and let the Government out straight, and would it not be advisable? What I want you to point out is the objection to that sort of plan.

Maj. HANNAY. If any increased cost charge were to be added, I should suggest that very one, Mr. McKenzie because it would be very difficult to arrive at the other cost, and the clerical labor would probably eat up the increased cost to the Government. Of course, I think that we must consider, on the whole, the limited things in connection with inducements of the Army, and all these little things, little as they are, are some of the inducements that hold the Army together.

Mr. McKENZIE. I agree with you.

Maj. HANNAY. When we are underpaid, and all that. It is a very small prerequisite and it does not amount to very much, but I should suggest that if it were added in any way, that would be the way to do it.

The CHAIRMAN. Mr. Fields wants to ask a question.

Mr. FIELDS. Major, I listened to the reading of the law, the references made a while ago, and I did not quite get it. Does it provide that the commissary articles shall be sold at cost?

Maj. HANNAY. Yes; at cost.

Mr. FIELDS. Now, I believe you say that you omit transportation and storage charges, etc.?

Maj. HANNAY. Yes, sir.

Mr. FIELDS. Now, we will say that an article costs \$10 and it costs \$1 to freight it, to lay it down in the house. Do you figure that would cost the Government \$10 or \$11.?

Maj. HANNAY. \$10; the original cost.

Mr. FIELDS. Does the law say original cost or cost?

Maj. HANNAY. It says cost.

Gen ROGERS. I think it has been so construed, Mr. Fields, for a great many years, that it is the invoice price of the article.

Mr. FIELDS. Major, what is the item in the bill for transportation, Commissary Department? How much does it amount to?

Maj. HANNAY. That comes under transportation of the Army. It does not come under subsistence of the Army.

Mr. FIELDS. About what would it amount to approximately?

Maj. HANNAY. I could not tell you, Mr. Fields.

Mr. FIELDS. Well, whatever it is, it is not charged on the price of the goods as laid down in the commissary.

Maj. HANNAY. It is not. The majority of these sales come from supplies purchased for stock for soldiers' rations. They are a part of the ration article. They are sold to enlisted men, and other exceptional articles are sold to enlisted men as well as to officers. Enlisted men as well as officers are involved in all these sales, of course.

The CHAIRMAN. In section 604 the law provides, as to sales between the War Department and other departments or between two bureaus of the War Department, that "the price to be charged shall be the contract or invoice price of the supplies." Now, there the law fixes what is the cost price, the invoice price. "When the transaction is between the Subsistence Department and another executive department of the Government, or the employees thereof, the price to be charged shall include the contract or invoice price and 10 per cent additional to cover wastage in transit and the cost of transportation." But that, of course, is all omitted when the sales are made to officers and men of the Regular service.

Maj. HANNAY. The sale price fixed in these sales stores is the last invoice price. Now, the next item is for meals for competitors at national rifle match, \$12,000.

The CHAIRMAN. You are going to have that match this year at Camp Perry?

Maj. HANNAY. So we were informed.

The CHAIRMAN. So we were informed also.

Maj. HANNAY. For commutation of rations, cadets at United States Military Academy, \$521,950.

The CHAIRMAN. That is predicated upon the amount which is already carried—

Maj. HANNAY (interposing). \$1.10, I understand it is.

The CHAIRMAN. \$1.08.

Maj. HANNAY. Yes; that was made up before the Military Academy bill was passed, Mr. Chairman.

The CHAIRMAN. So that there will be a slight reduction?

Maj. HANNAY. To about \$512,460, figured at \$1.08. The next item is commutation of rations, men on furlough, \$805,208; men traveling, \$5,417,257; female nurses, detached, \$18,688; men to contest in Army competitions, \$14,512; nurses on leave, \$17,465; applicants for enlistment, traveling, \$2,250; general prisoners, traveling, \$9,033; nurses at hospitals, \$272,983; men sick in hospital, \$2,712,325.

Mr. GREENE. Is that the end of the hospital item?

Maj. HANNAY. Men sick in hospital, \$2,712,325.

Mr. GREENE. Is that your last hospital item?

Maj. HANNAY. There is one more. General prisoners sick in hospital, \$12,474.

Mr. GREENE. Have you formed any expectation as to the gradual decrease in the number of people sick in hospitals, and are those figures based upon that?

Maj. HANNAY. That is from the Surgeon General's office. He has given his estimate.

The CHAIRMAN. For the fiscal year?

Maj. HANNAY. Yes; for the fiscal year 1921.

The CHAIRMAN. The average number for the year?

Maj. HANNAY. Yes, sir; under patients in tuberculosis hospitals, he gives 246,961 rations for the year. He has calculated it by rations.

The CHAIRMAN. Is the price of the ration in the hospital the same as it is elsewhere?

Maj. HANNAY. No, sir; it is higher.

The CHAIRMAN. That is what I thought.

Maj. HANNAY. Tuberculosis hospitals have a higher ration than the others. They use more eggs, milk, and butter.

The CHAIRMAN. My recollection is that we increased the price of the ration for those hospitals.

Maj. HANNAY. Yes, sir. The female nurses at those hospitals receive the same increase, of course.

The CHAIRMAN. Naturally.

Mr. GREENE. How do those figures for rations, for subsistence of hospital patients that are now estimated for by the Surgeon General for the coming fiscal year, compare with our last prewar year? Have you any figures on that?

Maj. HANNAY. We can put that in the record.

Prewar cost of ration for patient in hospital, \$0.50. Estimated cost of ration for 1921 at nontubercular hospitals, \$0.7595; at tuberculosis hospitals, \$0.8138. The prewar rate of men in hospital was 1.75 per thousand in tubercular hospitals and 23 men per thousand in nontubercular. However, the rate will be much larger from now on, owing to the fact that in prewar periods patients were discharged much sooner than is being done now. At present all patients, and particularly tubercular ones, are retained in hospitals until the maximum amount of improvement is discerned, hence a greater number of rations will be required for increasing Army strength.

The CHAIRMAN. I think that is also affected by the high cost of living.

Maj. HANNAY. Very much so. The next item is for commutation of rations, warrant officers, mine planters, \$66,247. For advertising, \$1,321. That covers all advertising in the procurement of supplies in that connection. For prizes for school graduates, \$1,050. That is for the school for bakers and cooks which the Secretary of War has directed to be established.

The CHAIRMAN. This language does not allow you to expend more than \$900 for that purpose?

Maj. HANNAY. That was the provision made last year, Mr. Chairman. We ask for this same amount, which is the amount that the Secretary of War has directed. It is for seven schools at \$150 a school that he desires to establish.

The CHAIRMAN. The language in this tentative draft is, "For providing prizes to be established by the Secretary of War for enlisted men of the Army who graduate from the Army schools for bakers and cooks, the total amount of such prizes at the various schools not to exceed \$900 per annum." Now, you are asking for \$1,050, so that you would have to have a change of language there.

Maj. HANNAY. There are five schools within the continental limits of the United States and one in the Hawaiian Islands and one in the Philippine Islands, making seven all told. I am informed by The Adjutant General of the Army that these are the contemplated schools and that the prize is \$150 per school.

The CHAIRMAN. If we appropriate \$1,050, as you suggest, you would not be able to use more than \$900 of that, under this language?

Maj. HANNAY. No, we would have to ask that the language be changed.

The CHAIRMAN. That is what I was thinking.

Mr. GREENE. What is the theory of having a separate bakers' school in the insular possessions inasmuch as the troops that went there to occupy them got their military training and start over here? Why can not the graduates of those continental schools be sent to the Philippines as part of its garrison?

Maj. HANNAY. There has to be a constant turnover in these graduates to get results, Mr. Greene. I think it is highly desirable to keep as many men in this school as can be spared for that instruction. A company commander never gets too many cooks and you never get too many bakers.

Mr. GREENE. But why can not that turnover take place in the continental United States and save two overheads?

The CHAIRMAN. Do you not get any enlisted men in the Philippines at all, or do the same men remain constantly in the Army without any additions through enlistment in our insular possessions?

Maj. HANNAY. We are sending replacements all the time, Mr. Chairman, over there constantly, but they have this field equipment and these schools are conducted with it to keep the personnel ready in time of war. That is another reason.

The CHAIRMAN. I simply asked my question as a sort of preface to the one asked by Mr. Greene. Could you answer Mr. Greene's question? Why should not these men all be trained before they go over to the islands?

Gen. ROGERS. I should say in a general way, Mr. Chairman, that it would take too many men out of a company, for instance. Over

there they have the full company strength, and just at the present time we have had all these troops coming in from Siberia. They have full company strength over there, and I believe that the company commanders would object to having a greater proportion of the men sent from those companies than in the States.

The CHAIRMAN. Does that school also train Philippine Scouts?

Maj. HANNAY. Exactly.

The CHAIRMAN. And that personnel is changing all the time?

Maj. HANNAY. Yes, sir.

Mr. GREENE. Now, how about Hawaii? Is it the idea and intention that pretty much everybody who starts out in the Army to carry a rifle eventually becomes a baker? If that is the case, the company will become quite sadly depleted. They say it takes nine tailors to make a man. Now, how many bakers does it take to make one soldier?

The CHAIRMAN. Some times it takes a good many cooks to feed the men.

Mr. GREENE. Understand, I am not questioning the propriety of these schools, but if these men are to be taken from the ranks and sent to cooking school down there, why should not that training take place at the recruit barracks, at the recruit depots before they go to the insular possessions?

Gen. ROGERS. I do not know just what the situation is. I imagine some of these officers who have been company commanders could tell you. I think they take a certain number from each company and allow them to return and then take another set of men.

Mr. GREENE. Then you run the school in Hawaii that will represent in pupils one man for each company unit in its garrison?

Gen. ROGERS. Yes, sir.

Mr. GREENE. That is considerable overhead for a small attendance.

Maj. HANNAY. That overhead is fixed anyway. It belongs to these organizations.

The CHAIRMAN. Is there not a great saving to the Government also in this way—

Maj. HANNAY (interposing). Yes; there is.

The CHAIRMAN (continuing). These men, being trained to utilize the food that is given them for cooking, do not spoil it in the ordinary ways that an untrained cook would spoil it?

Maj. HANNAY. Yes, they use it in the most economical manner.

The CHAIRMAN. I know something of the genesis of these schools. They were established after the Spanish-American War when the complaints about the preparation of the food for the enlisted men were something awful. The newspapers of that day printed article after article of complaint. The men who were then in high stations in the Army suggested the organization of these schools, and their organization, in my opinion, has been fully justified by the war. We had thousands of men who were trained to cook the food properly for the greatly increased military forces that we were called upon to bring to the colors.

Mr. GREENE. Of course, the principle of having a baker's school is not in question here at all. The question is as to their number and location, to suit the practical uses for which they were designed.

Maj. HANNAY. There is one thing about that, Mr. Greene, and that is this. You see, each company picks out a man who has the inclina-

tion and the tendency to develop into a cook and they send him to the school.

Mr. GREENE. How does that take place in the continental United States, with the units scattered all over the United States? Do they have to go a distance that will represent the nearest approach to one of the five schools?

Maj. HANNAY. Yes; they go to the nearest school. The details of these schools are being operated under The Adjutant General's office. I believe it is contemplated to turn them back to the Quartermaster's Department, to which they originally belonged.

Mr. GREENE. Is it conceivable, as a practical every-day bit of military experience, that units that are designed for overseas duty, for garrison in Hawaii and the Philippines, could be sent over with a sufficient complement of trained cooks?

Gen. ROGERS. It is almost impossible to get cooks anywhere.

Mr. GREENE. But would not the same process that brings up cooks for the garrisons in the continental United States also provide cooks for overseas garrisons?

Maj. HANNAY. I do not believe you could get the men to go in and be trained as cooks. I think it takes a good deal of persuasive power on the part of the company commander to get them to go to the school.

Mr. GREENE. That is true of inducing a man to follow any avocation.

Maj. HANNAY. You see, the company commander is interested in having a good cook for his company.

Mr. GREENE. Exactly; and this company commander has no experienced cooks before the troops are sent to Hawaii?

Maj. HANNAY. I beg your pardon. I do not think they are sending troops over there as organizations. They send troops over there, but they do not send them as organizations. They are sent as replacements.

Mr. MCKENZIE. General, is not this your experience, that by the time the man had been developed into a first-class cook he is grabbed up by somebody outside to be a baker or a cook?

Gen. RODGERS. Well, they are very hard to get.

The CHAIRMAN. That was the very same argument that was used against the formation of the cook and baker schools, that we were training men for the huge lumber camps and the construction camps. But I think that experience has shown that the movement was productive of great good and has done great good in the Army. In my opinion it has paid for itself; for a soldier, I take it, is no different from an ordinary mortal, and if his food is well cooked he is satisfied, whereas if his food is not well cooked he gets indigestion and is just as grumpy as any other man under those circumstances.

Mr. MCKENZIE. I will ask the Major if the simple way out of this matter would not be, instead of changing the language, just to leave the appropriation the same as it was last year?

Maj. HANNAY. Mr. McKenzie, this estimate as to the number of schools, etc., is something that I have no information about. It is something that was submitted to us.

Mr. MCKENZIE. If we try to change the language, it is subject to a point of order, and I think we had better leave it where it is.

Maj. HANNAY. I think there is nothing more important. There is no better return for the money than these bakers' and cooks' schools in the Army. It is not only a question of the better quality of the food but the health of the men.

The CHAIRMAN. How many men does the company baker ordinarily have to bake bread for?

Maj. HANNAY. The bread is baked in the bakery, Mr. Chairman.

The CHAIRMAN. The bakeries supply all the companies?

Maj. HANNAY. In prewar days there were 65 men, and 2 cooks, to a company of infantry.

The CHAIRMAN. Suppose a baker spoils a batch of bread for the organization. How many barrels of flour are ordinarily involved?

Maj. HANNAY. Three barrels.

The CHAIRMAN. And the flour costs nowadays, I think, something like \$10 a barrel.

Maj. HANNAY. Just about.

The CHAIRMAN. I understand from Mr. Fields it is about \$16 a barrel. Not very long ago it was \$15 a barrel. But if a single batch of bread is spoiled, the wastage to the Government is very considerable, is it not?

Maj. HANNAY. It is very considerable.

The CHAIRMAN. And the inconvenience to the men is still more considerable?

Maj. HANNAY. Mr. Chairman, these men are taught to handle the ration in the most economical as well as the most efficient and sanitary way.

Mr. GREENE. I think the record ought to show that no person in the room, so far as I know, has raised his voice to suggest that there ought not to be these bakery schools, but everybody has approved of it. The only question I have been trying to satisfy myself about is whether we had the proper number distributed in proper places. That is all.

The CHAIRMAN. As I understand the testimony, we have no complete organizations in these insular possessions, but we constantly send down there replacement troops and these men who go down as replacements probably have no trained cooks or bakers among them. It is desirable to have a school in the insular possessions to take care of that situation.

Maj. HANNAY. And the Philippine Scouts as well, otherwise they would have to be sent all the way back to the United States.

The CHAIRMAN. You may proceed with the items.

Maj. HANNAY. The next item is for other necessary expenses, etc., \$109,458. This item is for the care and preservation, and it covers twine, paper bags, excelsior for packing cases, lumber, salt for rebrining, and a number of items of that character. The next item is for customs duties, \$5,000. That involves certain articles on which we have to pay customs duties in entering the Philippine Islands. For losses on subsistence stores, \$173,180. That is to cover any losses whatever for spoiling or in case of accident, in quantities too large to be covered by a board of survey, for instance, in case of storm or damage by the elements.

The CHAIRMAN. That is to be prepared for an emergency?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. It is really an emergency fund?

Maj. HANNAY. Yes; an emergency measure. That covers the items under this appropriation.

The CHAIRMAN. If the members of the committee do not desire to ask any additional questions on this subject, we will take up the item for regular supplies. The total amount in the Book of Estimates is \$71,869,000. I would take it that that was predicated also on an Army of 547,000 enlisted men?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. Now, will you kindly give us the new estimates on the four strengths that we have been talking about?

Maj. HANNAY. On a grand total of 175,000 men, the amount is \$42,450,255.

The CHAIRMAN. The other strengths you will kindly put into the hearing. We will not take any time on that.

Estimate, fiscal year 1921, regular supplies.

FOR 175,000 MEN.

Name of item.	Purchase and Storage.		Tank Corps.		Chemical Warfare.		Air Service.	
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.
Care and protection.....	\$1.04	\$208,572.00						
Construction and repair, military reservation fences.....								
Stoves, heating.....	.083	16,646.00						
Heating apparatus, installation and repair.....	.233	46,728.00						
Ranges and cooking stoves.....	.403	80,822.00						
Field bakery equipment.....	1.276	255,902.00						
Repair and maintenance, heating and cooking appliances.....	.103	20,637.00						
Candles.....	.15	30,062.00						
Matches.....	.26	5,815,950.00						
Heat.....	.26	50,137.00						
Appliances for handling fuel.....	.06	12,033.00						
Light.....	.96	192,528.00						
Mineral oil.....	.086	17,400.00						
Engine supplies for modern batteries.....	1.41	282,775.00						
Fuel (for laundries, lighting plants, modern batteries, Air Service, etc.).....	.096	19,062.00						
Gasoline.....			\$0.553	\$110,904.00	\$0.80	\$160,440.00	\$0.518	\$104,000.00
Lubricants.....			.033	6,618.00	.038	7,621.00	18.50	3,750,000.00
Bake ovens and apparatus, purchase and repair.....					.008	1,604.00	1.496	300,000.00
Ice, issue to organizations.....	1.09	84,000.00						
Ice for issue to offices.....	1.464	263,606.00						
Ice for preservation of stores.....	.373	74,806.00						
Laundries, construction and repair.....	.373	74,806.00						
Laundries, operation and maintenance.....	2.483	486,000.00						
Soap, issue.....	19.40	3,880,670.00						
Toilet paper.....	1.13	226,621.00						
Towels.....	1.55	110,302.00						
Post schools and libraries.....	.042	8,423.00						
Officers' schools.....	.164	32,880.00						
Commercial newspapers, market reports, etc.....	.01	2,006.00						
Tableware.....	1.867	13,560.00						
Meat equipment.....	1.867	274,182.00						
Forage.....	6.68	131,982.00						
Salt for animals.....	68.31	12,660,570.00						
Vinegar for animals.....	.041	8,223.00						
Stocks for raising forage.....	.123	26,473.00						
Implements for raising forage.....	.099	14,000.00						
	.074	16,000.00						

[illegible]

FOR 175,000 MEN—Continued.

Name of item.	Construction Division.					Grand total.
	New construction.		Maintenance.		Total.	
	Per capita.	Total.	Per capita.	Total.	Per capita.	
Care and protection.....					\$1.04	\$208,572
Construction and repair, military reservation fences.....			\$0.062	\$12,448.00	\$0.062	12,448
Stoves, heating.....					.083	16,646
Heating apparatus, installation and repair.....	\$1.635	\$337,991.00	4.476	897,786.00	6.112	1,225,777
Ranges and cooking stoves.....					.233	46,728
Field bakery equipment.....					.403	80,822
Repair and maintenance, heating and cooking appliances.....					1.276	255,902
Candles.....					.103	20,657
Matches.....			.249	50,000.00	.249	50,000
Heat.....					.25	50,137
Appliances for handling fuel.....					13.537	2,715,000.00
Light.....	.549	110,195.00	.991	198,750.00	1.54	308,945.00
Lighting systems installation and repair.....					.96	192,528.00
Mineral oil.....					.086	17,400.00
Engine supplies for modern batteries.....			2.468	500,000.00	2.468	500,000.00
Fuel (for laundries, lighting plants, modern batteries, Air Service, etc.).....					5.221	1,047,215.00
Gasoline.....					19.384	3,887,577.00
Lubricants.....	.094	19,925.00	.113	22,780.00	.207	41,705.00
Post bakeries, construction and repair.....					1.536	306,227.00
Bake ovens and apparatus, purchase and repair.....					.75	150,508.00
Ice machines, purchase and maintenance.....	.36	72,230.00	.39	78,278.00	.75	150,508.00
Ice, issue to organizations.....					1.464	293,605.00
Ice for issue to offices.....					.373	74,805.00
Ice for preservation of stores.....					.373	74,805.00
Laundries, construction and repair.....	2.941	589,950.00	.418	84,000.00	3.36	673,950.00
Laundries, operation and maintenance.....					5.843	1,171,950.00
Hire of employees (construction division).....			12.259	2,438,667.00	12.259	2,438,667.00
Soap, issue.....					1.13	226,621.00
Toilet paper.....					.65	110,392.00
Towels.....					.042	8,423.00
Post schools and libraries.....					.164	32,860.00
Officers' schools.....					.01	2,003.00
Commercial newspapers, market reports, etc.....					.087	17,590.00
Tableware.....					1.367	274,162.00
Mass equipment.....					.658	131,962.00
Mass transport.....					.0431	13,096,570.00

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Salt for animals.....							8,223.00	.041
Vinegar for animals.....							26,473.00	.132
Seeds for raising forage.....							14,000.00	.069
Implement for raising forage.....							15,000.00	.074
Labor for raising forage.....							39,000.00	.194
Expenses incident to raising forage.....							13,000.00	.064
Straw or soldiers' bedding.....							72,196.00	.36
Paints and oils.....							20,857.00	.103
Horse and mule shoes.....							80,445.00	.446
Shoeing horses and mules.....							25,260.00	.126
Tools, chest, and issue outfits.....							464,874.00	2,317
Rope and cordage.....							6,217.00	.03
Stationery and office supplies.....							701,925.00	3,50
Office furniture.....							132,363.00	.66
Blank forms.....							70,192.00	.35
Certificates for discharged soldiers.....							2,407.00	.012
Printing.....							465,276.00	2,32
Total.....	5.58	1,119,291.00	34,992	7,017,709.00	40,572	8,137,000.00	205,233	41,159,590.00
Reserve Officers' Training Corps, equipment.....							275,622.00	1.374
Reserve Officers' Training Corps, forage.....							302,043.00	1.50
Total, Reserve Officers' Training Corps.....							577,665.00	2.88
Grand total.....	5.58	1,119,291.00	34,992	7,017,709.00	40,572	8,137,000.00	208,113	41,737,255.00
Cleaning and preserving materials.....							3,555	713,000.00
Grand total.....	5.58	1,119,291.00	34,992	7,017,709.00	40,572	8,137,000.00	211,669	42,450,255.00

Estimate, fiscal year 1921, regular supplies—Continued.
FOR 200,000 MEN.

Name of item.	Purchase and Storage.		Tank Corps.		Chemical Warfare.		Air Service.	
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.
Care and protection.....	\$1.04	\$235,872.00						
Stoves, heating.....	.083	18,824.00						
Ranges and cooking stoves.....	.263	61,841.00						
Field bakery equipment.....	.423	97,491.00						
Repair and maintenance heating and cooking apparatus.....	1.703	390,367.00						
Candles.....	.178	39,360.00						
Matches.....	.15	34,020.00						
Heat.....	25.00	6,577,200.00						
Appliances for handling fuel.....	.25	55,700.00						
Light.....	.06	13,604.00						
Lighting systems, installation and repair.....	.96	217,738.00						
Material of.....	4.076	17,400.00						
Engine supplies for modern batteries.....	1.41	319,768.00						
Fuel for laundries, lighting plants, modern batteries, and air service.....	.086	21,546.00						
Gasoline.....								
Lubricants.....								
Post batteries, construction and repair.....								
Post batteries, construction and repair.....	1.49	34,000.00						
Post batteries, construction and repair.....	1.464	332,035.00						
Post batteries, construction and repair.....	.373	84,598.00						
Post batteries, construction and repair.....	.373	84,598.00						
Post batteries, construction and repair.....	2.198	498,000.00						
Laundries, construction and repair.....	19.40	4,399,990.00						
Laundries, operation and maintenance.....	1.13	255,284.00						
Soap issue.....	.042	9,526.00						
Toilet paper.....	.042	9,526.00						
Towels.....	.164	105,235.00						
Post schools and libraries.....	.01	2,263.00						
Officers' schools.....	.059	13,590.00						
Commercial newspapers, market reports, etc.....	1.367	310,098.00						
Tableware.....	1.658	149,234.00						
Meat equipment.....	68.31	15,492,708.00						
Feed for animals.....	.041	9,399.00						
Salt for animals.....	.132	29,693.00						
Vinegar for animals.....	.061	14,000.00						
Seeds for raising forage.....	.066	15,000.00						
Implement for raising forage.....	.171	39,000.00						
Expenses incident to raising forage.....	.067	15,000.00						
Straw for soldiers' bedding.....	.36	81,648.00						

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[illegible]

Estimate, fiscal year 1921, regular supplies—Continued.

FOR 200,000 MEN—Continued.

Name of item.	Construction Division.						Grand total.	
	New construction.		Maintenance.		Total.		Per capita.	Total.
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.		
Care and protection.....							\$1.04	\$235,872.00
Construction and repair military reservation fences.....							.054	12,448.00
Stores, heating.....			\$0.054	\$12,448.00	\$0.054	\$12,448.00	.054	12,448.00
Heating apparatus, installation and repair.....							.063	18,924.00
Ranges and cooking stoves.....	\$1.446	\$327,991.00	3.958	897,786.00	5.404	1,225,777.00	5.404	1,225,777.00
Field bakery equipment.....							.233	52,844.00
Repair and maintenance heating and cooking apparatus.....							.403	91,400.00
Candles.....							1.276	289,397.00
Matches.....							.103	23,360.00
Heat.....			.22	50,000.00	.22	50,000.00	.15	34,020.00
Appliances for handling fuel.....							29.22	6,627,200.00
Light.....			11.97	2,715,000.00	11.97	2,715,000.00	.25	56,700.00
Lighting systems, installation and repair.....	.485	110,195.00	.876	198,750.00	1.362	308,945.00	12.03	2,728,008.00
Mineral oil.....							1.362	308,945.00
Engine supplies for modern batteries.....							.96	217,728.00
Fuel for laundries, lighting plants, modern batteries, and air service.....							.076	17,400.00
Gasoline.....			2.20	500,000.00	2.20	500,000.00	4.873	1,105,228.00
Lubricants.....	.063	18,925.00	.10	22,780.00	.163	41,705.00	17.22	3,905,584.00
Post bakeries, construction and repair.....							1.363	309,288.00
Bake ovens and apparatus, purchase and repair.....							.183	41,705.00
Ice machines, purchase and maintenance.....	.318	72,230.00	.345	78,278.00	.663	150,508.00	.149	34,000.00
Ice for issue to organizations.....							.663	150,508.00
Ice for issue to officers.....							1.464	332,036.00
Ice for preservation of stores.....							.373	84,586.00
Laundries, construction and repair.....	2.80	580,960.00	.37	84,000.00	2.971	673,960.00	5.167	1,171,960.00
Laundries, operation and maintenance.....							19.40	4,399,920.00
Hire of employees, Construction Division.....			10.84	2,488,667.00	10.84	2,488,667.00	10.84	2,488,667.00
Soap issue.....							1.13	256,284.00
Toilet paper.....							.55	124,740.00
Towels.....							.042	9,526.00
Post schools and libraries.....							.164	105,235.00
Officers' schools.....							.01	2,268.00
Commercial newspapers, market reports, etc.....							.089	19,400.00
Tableware.....							1.267	310,084.00
Meat equipment.....							.658	149,284.00
Garage.....							68.31	15,467,708.00

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Salt for animals.....					.041	9,296.00
Vinegar for animals.....					.132	26,938.00
Seeds for raising forage.....					.081	14,000.00
Implement for raising forage.....					.066	15,000.00
Labor for raising forage.....					.171	38,000.00
Expenses incident to raising forage.....					.067	13,000.00
Straw for soldiers' bedding.....					.36	81,648.00
Paints and oils.....					.103	23,587.00
Horse and mule shoes.....					.446	101,153.00
Shoeing horses and mules.....					.126	28,577.00
Tools, chests, and issue outfits.....					2.317	626,722.00
Rope and cordage.....					.021	4,783.00
Stationery and office supplies.....					.021	793,800.00
Office furniture.....					3.50	149,688.00
Blank forms.....					.35	79,580.00
Certificates for discharged soldiers.....					.012	2,722.00
Printing.....					2.32	526,176.00
Total.....	4.885	1,119,261.00	30.942	7,017,709.00	35.877	8,137,000.00
Reserve Officers' Training Corps equipment.....					1.215	275,622.00
Reserve Officers' Training Corps forage.....					1.331	302,043.00
Total, Reserve Officers' Training Corps.....					2.547	577,665.00
Grand total.....	4.885	1,119,261.00	30.942	7,017,709.00	35.877	8,137,000.00
Cleaning and preserving materials.....						45,497,346.00
Grand total.....	4.885	1,119,261.00	30.942	7,017,709.00	35.877	8,137,000.00
						46,210,346.00

Estimate, fiscal year 1921, regular supplies—Continued.

FOR 225,000 MEN.

Name of item.	Purchase and Storage.		Tank Corps.		Chemical Warfare.		Air Service.	
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.
Care and protection.								
Construction and repair of military reservation fences.	\$1.04	\$263,172.00						
Stove, heating.	.083	21,003.00						
Heating apparatus, installation and repair.	.233	58,961.00						
Ranges and cooking stoves.	.403	101,979.00						
Field bakery equipment.	1.276	322,892.00						
Repair and maintenance, heating and cooking appliances.	.103	26,064.00						
Candles.	.15	37,957.00						
Matches.	29.00	7,338,450.00						
Heat.	.25	63,782.00						
Appliances for handling fuel.	.06	15,183.00						
Light.	.96	242,918.00						
Mineral oil.	.068	17,400.00						
Engine supplies for modern batteries.	1.41	356,800.00						
Fuel (for laundries, lighting plants, modern batteries, and air service).	.095	24,040.00	\$0.553	\$139,937.00	\$0.80	\$202,440.00	\$0.41	\$104,000.00
Gasoline.			.083	8,351.00	.038	9,616.00	14.819	3,750,000.00
Lubricants.						2,024.00	1.185	300,000.00
Bake ovens and apparatus, purchase and repair.	.134	34,000.00						
Ice machines, purchase and maintenance.								
Ice for issue to organizations.	1.464	370,465.00						
Ice for preservation of stores.	.373	94,388.00						
Laundries, construction and repair.	.373	94,388.00						
Laundries, operation and maintenance.	1.967	498,000.00						
Hire of employees (construction division).	19.40	4,909,170.00						
Soap issue.	1.13	285,945.00						
Toilet paper.	.55	139,177.00						
Towels.	.042	10,628.00						
Post schools and libraries.	.164	41,500.00						
Officers' schools.	.01	2,530.00						
Commercial newspapers, market reports, etc.	.053	13,590.00						
Tableware.	1.367	345,919.00						
Mess equipment.	.658	166,570.00						
Forage.	68.31	17,285,945.00						
Salt for animals.	.041	10,375.00						
Vinegar for animals.	.132	33,403.00						
Seeds for raising forage.	.055	14,000.00						
Implement for raising forage.	.069	16,000.00						
Labor for raising forage.	.154	39,000.00						

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Expenses incident to raising forage.					
Straw for soldiers' bedding	.051	13,000.00			
Paints and oils	.36	91,086.00	.008	2,074.00	.096
Horse and mule shoes.....	.446	112,860.00			
Saddling horses and mules.....	1.26	31,884.00			.04
Tools, chests, and issue outfit.....	2.25	569,362.00	.078	7,685.00	.016
Ropes and cordage.....			.005	1,263.00	
Cationary and office supplies.....	3.50	985,675.00			
Office furniture.....	.56	187,075.00			
Birds.....	.56	187,075.00			
Certificates for discharged soldiers.....	.012	8,087.00			
Printing.....	2.32	587,076.00			
Total.....	141.645	35,843,494.00	.626	158,662.00	.998
Reserve Officers' Training Corps equipment.....	1.089	275,622.00			
Reserve Officers' Training Corps forage.....	1.193	302,043.00			
Total Reserve Officers' Training Corps.....	2.282	577,665.00			
Grand total.....	143.928	36,421,159.00	.626	158,662.00	.998
Cleaning and preserving materials.....	2.817	713,000.00			
Grand total.....	146.746	37,134,159.00	.626	158,662.00	.998
					4,154,000.00,

Estimate, fiscal year 1921, regular supplies—Continued.

FOR 225,000 MEN—Continued.

Name of item.	Construction Division.				Grand total.	
	New construction.		Maintenance.		Per capita.	Total.
	Per capita.	Total.	Per capita.	Total.		
Care and protection.....					\$1.04	\$293,172.00
Construction and repair of military reservation fences.....					.049	12,448.00
Stove, heating.....					.083	21,033.00
Heating apparatus, installation and repair.....					4.844	1,225,777.00
Ranges and cooking stoves.....					.233	56,961.00
Field bakery equipment.....					.403	101,979.00
Repair and maintenance, heating and cooking appliances.....					1.276	322,962.00
Candles.....					.103	26,064.00
Matches.....					.15	37,957.00
Heat.....			.197	50,000.00	20.197	7,386,450.00
Appliances for handling fuel.....					.25	62,302.00
Light.....					10.729	2,715,000.00
Lighting systems, installation and repair.....			.785	196,786.00	1.822	308,945.00
Mineral oil.....	.435	110,196.00			.96	242,028.00
Engine supplies for modern batteries.....					.068	17,400.00
Fuel (for laundries, lighting plants, modern batteries, and air service).....			1.975	500,000.00	3.385	1,163,940.00
Gasoline.....					16.538	3,923,962.00
Lubricants.....					1.226	310,375.00
Post bakeries, construction and repair.....	.074	16,926.00	.09	22,780.00	.164	41,706.00
Bake ovens and apparatus, purchase and repair.....					.134	34,000.00
Ice machines, purchase and maintenance, fee for issue to organizations.....	.265	72,230.00	.309	78,278.00	.594	150,508.00
Ice for issue to offices.....					1.464	370,465.00
Ice for preservation of stores.....					.373	94,368.00
Laundries, construction and repair.....	2.331	599,960.00	.331	84,000.00	4.631	1,171,960.00
Laundries, operation and maintenance.....					19.40	4,909,170.00
Wife of employees (Construction Division).....			9.716	2,458,667.00	9.716	2,458,667.00
Soap issue.....					1.13	285,946.00
Toilet paper.....					.58	139,177.00
Food.....					.042	10,628.00
Post schools and libraries.....					.164	41,500.00
Officers' school.....					.01	2,320.00
Commercial newspapers, market reports, etc.....					.033	11,960.00
Tables and chairs.....					1.762	11,010.00
Bed equipment.....					.11	11,010.00

Estimate, fiscal year 1921, regular supplies—Continued.
FOR 300,000 MEN.

Name of item.	Purchase and Storage.		Tank Corps.		Chemical Warfare Service.		Air Service.	
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.
Care and protection.								
Stoves, heating.	\$1.04	\$310,900.00						
Ranges and cooking stoves.	.063	24,517.00						
Field-bakery equipment.	.233	69,667.00						
Repair and maintenance, heating and cooking appliances.	.403	120,497.00						
Candles.	1.276	381,521.00						
Matches.	.108	30,797.00						
Heat.	.18	44,866.00						
Appliances for handling fuel.	26.00	8,071,000.00						
Light.	.26	74,766.00						
Mineral oil.	.06	17,946.00						
Engine supplies for modern batteries.	.08	267,040.00						
Fuel (for laundries, lighting plants, modern batteries, and air service).	.053	17,400.00						
Gasoline.	1.41	421,560.00						
Lubricants.	.095	28,405.00	\$0.533	\$166,347.00	\$0.80	\$239,200.00	\$0.347	\$104,000.00
Bake ovens and apparatus, purchase and repair.			.033	9,867.00	.038	11,362.00	12.54	3,750,000.00
Ice for issue to organizations.	.113	34,000.00					1.038	300,000.00
Ice for issue to offices.	1.464	437,738.00						
Ice for preservation of stores.	.373	111,527.00						
Laundries, construction and repair.	.373	111,527.00						
Soap, issue.	1.666	498,000.00						
Toilet paper.	19.40	5,800,000.00						
Towels.	1.13	337,470.00						
Post schools and libraries.	.83	244,460.00						
Officers' schools.	.042	12,588.00						
Commercial newspapers, market reports, etc.	.104	29,088.00						
Tableware.	.01	2,900.00						
Mass equipment.	.045	13,500.00						
Forage.	1.397	408,723.00						
Salt for animals.	.638	191,742.00						
Vinegar for animals.	68.31	20,424,460.00						
Seeds for raising forage.	.041	12,266.00						
Implement for raising forage.	.132	39,498.00						
Labor required for raising forage.	.046	14,000.00						
Expense incident to raising forage.	.06	16,000.00						
Straw for soldiers' bedding.	.13	39,000.00						
Paints and oils.	.043	13,000.00						
	.301	107,640.00						
			.008	2,892.00	.006	28,704.00		

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Horse and mule shoes.....	.446								
Saddling horses and mules.....	1.78	129,364.00							
Tools, chests, and issue outfits.....	2.25	37,674.00	.028	8,372.00	.04	11,960.00			
Rope and cordage.....		672,760.00	.005	1,496.00	.016	4,784.00			
Stationery and office supplies.....	3.60	1,046,500.00							
Office furniture.....	.68	197,840.00							
Bank forms.....	.85	194,680.00							
Certificates for discharged soldiers.....	.012	\$1,836.00							
Printing.....	2.33	666,680.00							
Total.....	1.412	42,288,196.00	.637	187,473.00	.998	298,402.00	13.89	4,154,000.00	
R. O. T. C. equipment.....	.921	275,622.00							
R. O. T. C. forage.....	1.01	307,043.00							
Total R. O. T. C.....	1.931	577,665.00							
Grand total.....	143.186	42,812,854.00	.637	187,473.00	.998	298,402.00	13.89	4,154,000.00	
Cleaning and preserving materials.....	2.384	713,000.00							
Grand total.....	145.571	43,525,854.00	.637	187,473.00	.998	298,402.00	13.89	4,154,000.00	

FOR 299,000 M.F.N.—Continued.

Name of item.	Construction Division.						Grand total.	
	New construction.			Maintenance.				Total.
	Per capita.	Total.	Per capita.	Total.	Per capita.	Total.		
Care and protection.....						\$1.04	\$310,960.00	
Construction and repair, military reservation fences.....			\$0.041	\$12,448.00	\$0.041	\$12,448.00	12,448.00	
Stoves heating.....						.083	24,917.00	
Heating apparatus, installation and repair.....	\$1.006	\$327,991.00	3.002	897,786.00	4.009	1,225,777.00	1,225,777.00	
Ranges and cooking stoves.....						.233	69,697.00	
Field bakery equipment.....						.403	120,497.00	
Repair and maintenance, heating and cooking appliances.....						1.276	381,524.00	
Campfires.....						.103	30,797.00	
Motors.....						.15	44,850.00	
Heat.....			.167	50,000.00	.167	50,000.00	50,000.00	
Appliances for handling fuel.....						.28	74,750.00	
Lighting systems, installation and repair.....			9.09	2,715,000.00	9.08	2,715,000.00	2,715,000.00	
Fuel supplies for modern batteries.....	.308	110,198.00	.664	198,750.00	1.033	308,945.00	308,945.00	
Mineral oil.....						.90	267,040.00	
Gasoline.....			1.672	500,000.00	1.672	500,000.00	500,000.00	
Lubricants.....						.428	1,264,790.00	
Poof bakeries, construction and repair.....	0.63	18,928.00	.076	22,780.00	.139	41,708.00	41,708.00	
Bake ovens and apparatus, purchase and repair.....						.113	34,000.00	
Ice machines, purchase and maintenance.....	1.341	72,320.00	.261	78,278.00	.508	150,598.00	150,598.00	
Ice for issue to organizations.....						1.464	437,798.00	
Ice for issue to offices.....						.373	111,537.00	
Ice for preservation of stores.....						.373	111,537.00	
Laundries, construction and repair.....	1.973	589,960.00	.28	84,000.00	2.254	673,960.00	673,960.00	
Laundries, operation and maintenance.....						2.919	8,590,600.00	
Hire of employees (Construction Division).....			8.222	2,438,667.00	8.222	2,438,667.00	2,438,667.00	
Soap, issue.....						.86	164,430.00	
Toilet paper.....						.043	12,568.00	
Towels.....						.164	49,086.00	
Poof barracks and libraries.....						.01	2,980.00	
Officers' clubs.....						.046	13,940.00	
Postmaster's quarters, mail room reports, etc.....						1.367	4,067,131.00	
Postmaster's quarters, mail room reports, etc.....						.054	1,607,742.00	
Postmaster's quarters, mail room reports, etc.....						.08	2,414,440.00	

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Salt for animals.....						12,280.00
Vinegar for animals.....						39,668.00
Seeds for raising forage.....						14,000.00
Implements for raising forage.....						15,000.00
A laborer required for raising forage.....						39,000.00
Expense incident to raising forage.....						13,000.00
Straw for soldiers' bedding.....						107,640.00
Hairts and oills.....						31,043.00
Horse and mule shoes.....						128,241.00
Shoeing horses and mules.....						146,746.00
Tools, cheeks, and issue outfits.....						67,013.00
Ropes and cordage.....						8,722.00
Stationery and office supplies.....						1,049,510.00
Office furniture.....						107,240.00
Bice forms.....						46,104,650.00
Certificates for discharged soldiers.....						3,588.00
Printing.....						1012
Total.....	3,743	1,119,291.00	23.47	7,017,709.00	27.214	8,137,000.00
R. O. T. C. equipment.....						183,986
R. O. T. C. forage.....						921
Total R. O. T. C.....						1.01
Grand total.....	3,743	1,119,291.00	23.47	7,017,709.00	27.214	8,137,000.00
Cleaning and preserving materials.....						55,589,728.00
Grand total.....	3,743	1,119,291.00	23.47	7,017,709.00	27.214	8,137,000.00

Gen. LORD. The estimates that he is submitting have been approved by the Secretary of War, and they include estimates submitted under regular supplies by the construction division.

The CHAIRMAN. They include those which are found at the end of the paragraph?

Gen. LORD. Yes, sir; and there are some items in the body of the paragraph as well.

Maj. HANNAY. The total amount of this estimate, Mr. Chairman, which covers construction items, is \$8,137,000, which was turned over to us by construction. I understand that they have explained it to the committee.

The CHAIRMAN. They have described the matter.

Maj. HANNAY. Then if it is agreeable, I will omit those items which have been explained.

The CHAIRMAN. If you will, kindly do so. Gen. Marshall was before the committee and went over those items pertaining to this paragraph.

Mr. HANNAY. The first item is care and protection, \$208,572. That is a per capita cost of \$1.04; 99 cents was the previous per capita charge.

The CHAIRMAN. Now, these figures that you are giving are for an Army of how many?

Maj. HANNAY. One hundred and seventy-five thousand men.

Mr. McKENZIE. What does the item of care and protection involve, watchmen and fire protection?

Maj. HANNAY. For instance, insecticide, mouse traps, fly traps, soaps, lyes, mops, handles, metal polishes, blacking, and all sorts of things for the care of the property.

The CHAIRMAN. It does not include personnel?

Maj. HANNAY. No, sir; it does not.

The CHAIRMAN. Nor the pay thereof?

Maj. HANNAY. No, sir; it does not. The next item is for stoves, heating, \$16,646, and the per capita charge is 0.083 cent.

Mr. McKENZIE. Have you not a great many stoves on hand now, Major?

Maj. HANNAY. We have; yes, sir.

Mr. McKENZIE. Then why is it necessary to buy any more?

Maj. HANNAY. We have not enough for an Army of 175,000 men. We have deducted those on hand. There are 2,000 stoves on hand. We expect there will be on hand by June 30, 2,000 stoves. The quantity required is 3,000 less stock on hand.

Mr. McKENZIE. What has been done with the large number of stoves that were installed at some of the cantonments prior to the getting in of the permanent heating plants? Have they been salvaged?

Maj. HANNAY. I think most of them were burned out and worn out in the service, Mr. McKenzie. They had a very severe winter that first winter and those buildings were very light, and they had to keep up a terrific heat in them. I know at Camp Upton they were practically all burned out. Now, the next item is for ranges and cooking stoves, \$46,728, and a per capita cost of 0.233 cent.

The CHAIRMAN. There is another item in which it would appear that you have a large quantity of the material on hand.

Maj. HANNAY. Yes, sir. I will give you the figures. Mr. Chairman, we are not asking for any for enlisted men, except married noncommissioned officers who are allowed small quarters for their families, and for officers, small ranges. We have not been buying any of those for a number of years and they have deteriorated at the posts. We have enough on hand of what is called the No. 5 range for enlisted men. We are not asking anything for them.

The CHAIRMAN. How many of these stoves and ranges for officers and noncommissioned officers do you contemplate purchasing?

Maj. HANNAY. For officers, 1,140, and for noncommissioned officers, 460.

The CHAIRMAN. How about coffee roasters? Have you plenty of those on hand?

Maj. HANNAY. We do not need any of them, Mr. Chairman.

The CHAIRMAN. Well, the language is in here to authorize them, but I understand that you are not contemplating procuring any?

Maj. HANNAY. No, sir; we are not contemplating any.

The CHAIRMAN. But when we get on the floor and the Members of the House see the language "coffee roasters" somebody will naturally say, "Oh, you must have thousands of those that you bought during the war and that must be available for distribution." We ought to have the facts so that we can say that no money in this total is intended for the purchase of this, that, or the other commodity.

Maj. HANNAY. That is it exactly.

NOTE.—The funds asked for under Item No. 5, "Ranges and cooking stoves," do not include money for the procurement of coffee roasters, as it is considered there are sufficient coffee roasters on hand to last during the fiscal year 1921.

The CHAIRMAN. Then we will better be prepared to defend the item when we get on the floor.

Maj. HANNAY. Yes, sir.

Mr. MCKENZIE. Major, the statement that you will include in the record will specifically set out the different items for which this is to be used, and no other items will be considered?

Maj. HANNAY. Yes; exactly.

The CHAIRMAN. You will set them out in detail?

Maj. HANNAY. I will insert this in the record, if it is sufficient.

The CHAIRMAN. You may do so.

Maj. HANNAY. The next item is for field bakery equipment, \$80,822.

The CHAIRMAN. How many of those have you on hand? There ought to be a great number of them?

Maj. HANNAY. We are not asking for any ovens, but for spare parts under a number of headings, mostly chambers, trench covers, fronts, and all parts to repair those that have had hard service during the war, and also bread racks and cooking utensils in that connection.

The CHAIRMAN. Will you set that out in detail also?

Maj. HANNAY. Yes, sir.

NOTE.—The amount estimated for under item No. 7, "Field bakery equipment," does not include funds for the procurement of field bake ovens, as it is considered that sufficient complete ovens will be on hand to meet the requirements during the fiscal year 1921.

The funds asked for are to cover spare parts, such as tops; chambers 10-A; chambers 11-A; chambers 12-A; and also to cover the replacement of articles of the equipment that goes with the field bakery company as may be necessary.

The next item is for repair and maintenance, heating and cooking appliances, \$255,902. This includes repairs to heating stoves and ranges and cooking stoves. It covers cooking appliances of all kinds and rolling kitchens.

There are a great number of rolling kitchens that have to be extensively repaired, and that amounts to \$1.27 per capita; that is, in 1913, despite the lower costs, this item cost \$1.53 per capita.

The CHAIRMAN. Where do you find that language about rolling kitchens?

Maj. HANNA. We have just used the kitchens to cover it, cooking, etc.

The CHAIRMAN. That is under ranges and stoves?

Maj. HANNA. Repairs and maintenance of heating and cooking appliances. We take it as a cooking appliance. The next item is for candles, \$20,657. This item has not increased. It is the same as it was in 1913. Even though they cost more, the item is the same, but that is due to the fact that we are using less candles.

The CHAIRMAN. Did we not buy an enormous quantity of candles during the war?

Maj. HANNAY. I think we did, but we used enormous quantities, too, Mr. Chairman.

The CHAIRMAN. You have not any surplus at all?

Maj. HANNAY. None on June 30, is the report of storage. For matches, \$30,082, with a per capita cost of 15 cents per man per year.

The CHAIRMAN. How about that? When you were supplying the Army of practically 4,000,000 you must have bought matches in great quantity. Now, your Army is down to about 220,000 men and will be down lower by the beginning of the fiscal year. Have you not enough of those on hand to avoid purchasing more?

Maj. HANNAY. Storage reports none on hand.

The CHAIRMAN. None on hand?

Maj. HANNAY. That there will be none on hand in all these cases.

The CHAIRMAN. I understand. It is remarkable.

Maj. HANNAY. Some items, of course, we do not consider, because they have a large stock. In other items that are not well balanced in stock, we have to ask for something.

The next item is a large item, for heating, \$5,815,950. This is based on the present prices of the Fuel Administration, but we have been rather reliably informed that there is an agreement between the operators and the miners that there will be an increase of 27 per cent, so that we fear that this will result in a deficiency if that result takes place. The next item is for appliances for handling fuel, \$50,137. That is a construction item.

Mr. McKENZIE. That does not include any trucks for hauling the coal?

Maj. HANNAY. It is coal-handling machinery.

Mr. McKENZIE. But it does not include the purchase of any trucks?

Maj. HANNAY. No, sir. It includes wood-sawing machinery, too.

The CHAIRMAN. In establishing the amount of heat and light for an officer, those figures are predicated upon an average amount for each officer?

Maj. HANNAY. Yes; in each zone.

The CHAIRMAN. Can you tell us how much is allowed for light and how much for heat in each zone?

Maj. HANNAY. I can place that in the record, Mr. Chairman. It is rather voluminous.

The CHAIRMAN. It is?

Maj. HANNAY. Yes, sir. It is worked out in great detail.

The CHAIRMAN. How many zones have you?

Maj. HANNAY. We have 13 zones. Each zone is different each month.

The CHAIRMAN. Of course, in Alaska it would be very much different from what it is down in El Paso or San Antonio?

Maj. HANNAY. Yes, sir; it is worked out on an elaborate chart showing various data, averages, temperature, etc., throughout the country and in foreign possessions.

The CHAIRMAN. Without encumbering the record too much, if it can be done in a brief manner, it would be enlightening and interesting.

Maj. HANNAY. I have here the table of allowances which is not very large, and if that would be sufficient, I will insert it in the record, although it does not go into details about the zones.

The CHAIRMAN. It is the table of allowances for each room?

Maj. HANNAY. For each zone. Of course, it is based on the rooms and the zones.

The CHAIRMAN. If you can do it and if that list is brief, you may insert it in the record.

Maj. HANNAY. But that has nothing to do with this fuel item, Mr. Chairman. That shows the commutation by finance. Finance estimates for that. That is commutation in money value.

The CHAIRMAN. I understood that part of it, but they take, I assume, your figures that you have worked out for furnishing the real article?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. Instead of the commutation?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. And therefore it would come in properly here in connection with the fuel and light furnished in kind?

Maj. HANNAY. I will put in the record fuel in kind, if that is what you desire.

The CHAIRMAN. Yes.

Mr. GREENE. Is this literally the fact, that the table that is employed as the means of reckoning the cash commutation to an officer for heat and light is also the basis for any actual expenditures of the Government to furnish it in kind?

Maj. HANNAY. No.

The CHAIRMAN. I understood so.

Maj. HANNAY. No.

The CHAIRMAN. That is what I understood.

Maj. HANNAY. No, sir.

Mr. GREENE. No; one is a theory and the other is the actual purchase of the stuff.

Maj. HANNAY. Yes, sir.

The CHAIRMAN. I understood you arrived at that commutation figure from the figures that you established—

Maj. HANNAY (interposing). In kind?

The CHAIRMAN. Exactly.

Maj. HANNAY. They arrive at this figure from that basis.

Mr. GREENE. But one is a theoretical table based on a certain law of averages?

Maj. HANNAY. Yes, sir.

Mr. GREENE. And the other is what you may have to pay according to the region and the demand?

Maj. HANNAY. Yes; exactly.

Mr. MCKENZIE. In other words, putting it in another way, the commutation is fixed by law at so much?

Mr. GREENE. Oh, no.

Maj. HANNAY. The law simply authorizes the commutation and it is fixed by Executive order.

The CHAIRMAN. Gen. Lord, how is that? How do you arrive at the allowance?

Gen. LORD. The basis on which we are paying commutation of heat and light was worked out by an officer in the office of the Quartermaster General in consultation with the Comptroller of the Treasury, and the basis from which we estimate it as a matter of actual payment to the officer is on that table which has been approved by the Comptroller of the Treasury.

Mr. GREENE. That is the cash payment?

The CHAIRMAN. I understand, but the price for the commutation is predicated on the cash payments?

Mr. GREENE. They are the same thing. This table is the table from which you reckon the amount of money to make a cash payment, but that table is made up and has for a basis the result of money purchases in different zones at different times of fuel and light and is used to-day as an actual basis for furnishing any officer heat and light in kind.

Maj. HANNAY. Commutation of heat and light are paid to officers who do not occupy Government quarters, who are living somewhere where there are no Government owned quarters, and consequently the Government has no authority to heat them. Fuel in kind is furnished to officers occupying Government quarters, the Government heating the quarters, with whatever amount of fuel is necessary as fixes by allowances.

Mr. GREENE. Exactly.

The CHAIRMAN. And you figure out how much that fuel costs for the basis of this appropriation here?

Maj. HANNAY. No, sir. This is estimated on the actual amount of fuel we will have to buy, and the cost of fuel for the coming year is based upon the present prices.

The CHAIRMAN. Then does the commutation fluctuate according to the prices?

Maj. HANNAY. The commutation is fixed from time to time. It was last fixed in 1918 but to-day it is inadequate.

Gen. LORD. That is correct.

The CHAIRMAN. Because of the increased prices that you have to pay?

Gen. LORD. Yes, the cost of fuel.

Mr. McKENZIE. That is supposed to be a flexible rule, however, that can be put out by this board. I suppose the same rule could be reduced if coal went down?

Gen. LORD. Yes, by executive action.

The amount asked for under item No. 11 for "heat" is to cover procurement of fuel in kind only and does not cover commutation of heat and light paid to those entitled thereto. Funds for the latter purpose are estimated for by the Finance Service. Commutation of heat and light is payable from the appropriation "Pay of the Army," which is under the jurisdiction of the Finance Service.

The following schedule shows the present allowances of commutation of heat and light:

Army heat and light allowance.—The General Staff has carefully worked out certain changes in the old table of Army heat and light allowances which meet the increased cost of fuel and illuminants much more equitably than at present. The Comptroller of the Treasury has approved the new schedules as of October 1, 1918, and paragraphs 1036 and 1044, Army Regulations, will be changed immediately by the War Department and advance instructions issued as soon as possible. This means that payments for the period commencing October 1, 1918, will be made at the rates specified below. Payment of commutation of heat and light for a period prior to October 1, 1918, will be made at the old rate, regardless of date of payment.

Commutation of heat.—Where an officer or enlisted man is occupying quarters other than public, the Quartermaster Corps will pay commutation to such officer or enlisted man for the heat actually necessary for the number of rooms actually occupied, but not exceeding the number to which the rank of the officer or enlisted man entitles him, at rates per month as follows:

Rooms.	December, January, and February.				March and November.			
	Zone 1, 0°-20°.	Zone 2, 20°-30°.	Zone 3, 30°-40°.	Zone 4, 40°-60°.	Zone 5, 10°-25°.	Zone 6, 25°-35°.	Zone 7, 35°-45°.	Zone 8, 45°-65°.
1.....	\$9.35	\$8.85	\$8.50	\$8.15	\$9.00	\$8.60	\$8.35	\$7.25
2.....	15.10	14.10	13.30	12.30	14.80	13.80	12.40	10.90
3.....	20.40	18.90	17.10	16.20	19.65	18.15	16.35	14.10
4.....	24.40	22.80	21.00	19.40	23.80	22.20	19.80	17.00
5.....	28.00	26.50	24.25	22.50	27.25	25.50	23.00	19.50
6.....	31.50	29.70	27.00	25.20	30.60	28.50	26.10	21.90
7.....	35.00	32.90	29.75	27.65	33.95	31.50	28.70	24.15
8.....	38.40	36.00	32.40	29.60	37.20	34.40	31.20	26.40
9.....	41.85	39.15	35.10	31.60	40.50	37.35	33.75	28.35
10.....	45.00	42.00	37.50	33.00	43.50	40.00	36.60	30.50
11.....	47.85	44.55	40.15	34.65	46.65	42.90	38.50	32.45

Rooms.	April, May, and October.			June 1 to Sept. 30.	
	Zone 9, 35°-40°.	Zone 10, 40°-50°.	Zone 11, 50°-70°.	Zone 12, 45°-55°.	Zone 13, 55°-75°.
1.....	\$7.75	\$7.65	\$6.80	\$7.55	\$6.80
2.....	12.10	11.70	8.50	11.40	8.50
3.....	15.75	15.30	8.50	14.40	8.50
4.....	19.00	18.40	8.50	17.00	8.50
5.....	22.25	21.25	8.50	20.50	8.50
6.....	24.90	24.50	9.00	23.10	9.00
7.....	27.30	26.95	9.45	25.55	9.45
8.....	29.20	28.50	9.60	27.00	9.60
9.....	31.05	30.50	9.90	29.70	9.90
10.....	32.50	32.00	10.00	31.50	10.00
11.....	34.10	33.55	10.45	33.00	10.45

Commutation of light.—Where an officer or enlisted man occupies quarters other than public the Quartermaster Corps will pay commutation of light to such officer or enlisted man for the number of rooms actually occupied, but not exceeding the number to which the rank of the officer or enlisted man entitles him, at the following rates:

Rooms.	April to September, inclusive, per month.	October to March, inclusive, per month.
1.....	\$0.80	\$1.20
2.....	1.15	1.70
3.....	1.50	2.25
4.....	1.80	2.75
5.....	2.15	3.25
6.....	2.45	3.80
7.....	2.80	4.30
8.....	3.10	4.85
9.....	3.40	5.35
10.....	3.75	5.90
11.....	4.05	6.40

Maj. HANNAY. Would the chairman care to have this detail in regard to the advanced price of coal?

The CHAIRMAN. Yes.

Maj. HANNAY. For instance, the average price of anthracite coal in 1914 and 1915 was \$5.27 per ton, the cost to the Government. The present price is \$6.50, an increase of approximately 23 per cent. That is from the Department of Commerce information. The average price of bituminous coal in 1914 and 1915 was \$2.51 per ton, and the present price is \$3.42, an increase of approximately 36 per cent. The basis of the estimate here is \$22.25, which is the cost per capita in 1913, plus 30 per cent. It is \$29 per capita. That is the way we arrived at this cost. That is for fuel in kind, not commutation.

The CHAIRMAN. I understand.

Maj. HANNAY. The next item is for light, \$12,033. That covers lamp chimneys, wicks, and lamps in these posts where they have no electricity. The next item is for mineral oil, \$192,528.

The CHAIRMAN. What is that used for?

Maj. HANNAY. That is used at points where they have no electricity and for street lamps.

The CHAIRMAN. It is kerosene?

Maj. HANNAY. Yes, sir. For engine supplies for model batteries. \$17,400. That is at seacoast fortifications. For fuel for laundries, lighting plant, modern batteries, Air Service, etc., the total is \$547,215. The next item is for gasoline. The total is \$3,887,577.

The CHAIRMAN. Are you supplying all branches of the Army now with gasoline?

Maj. HANNAY. No, sir. We supply the Tank Corps, the Chemical Warfare Service, and the Air Service. Out of this amount the Air Service are estimating that they will require \$3,750,000, so that practically the whole estimate is for the Air Service. The other two organizations are the Tank Corps, who estimate for \$110,904, and the Chemical Warfare Service, \$7,621, and the Purchase and Storage Service, \$19,052.

The CHAIRMAN. The Quartermaster Department used to run its own automobiles. Are they now all run by the Motor Transport Corps?

Maj. HANNAY. Yes, sir. During the present fiscal year, Mr. Chairman, we have furnished gasoline to the Motor Transport Corps, but

we estimated for it in 1920. Now, these estimates are on the basis of the old national defense act, and the only services we have included are those which are not in the national defense act.

The CHAIRMAN. How did you arrive at that figure on gasoline? That is based on a——

Maj. HANNAY (interposing). Those services furnish the quantity and we furnish the price.

The CHAIRMAN. Do you contract for the quantity in advance?

Maj. HANNAY. We generally let the contract for delivery at certain points within certain zones at a certain price. The contract allows the contractor to deliver at a certain point as he desires.

The CHAIRMAN. Do you make a year's contract at a time?

Maj. HANNAY. One quarter at a time generally.

The CHAIRMAN. Suppose the price goes up considerably in the next quarter? Is your figure extensive enough to enable you to get through without any deficiency?

Maj. HANNAY. We are not placing our price with a view to a large increase. If it should result in a large deficiency in this item, we would ask you to increase it.

The CHAIRMAN. Fuel oil has gone up enormously within the past year?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. And the production of oil, I am told, is not increasing in proportion to the demand. So that the chances are that the price of gasoline and oil will be very much higher next year than it is this year. But I am satisfied with the fact that you have studied this carefully and have made due allowance.

Maj. HANNAY. We have made no increase in these prices. We are taking the present prices.

The CHAIRMAN. What are you paying for gasoline* for the Army now?

Maj. HANNAY. About 28 cents for aviation and 23 cents for ordinary. I think last quarter we got it for 21 cents. We got some for 17 or 18 cents before that, but it has increased.

The CHAIRMAN. I think it is now between 29 and 30 cents to the consumer.

Maj. HANNAY. Yes; but this is in large quantities.

Mr. McKENZIE. This is a \$3,000,000 item for gasoline.

The CHAIRMAN. Largely for the Air Service.

Mr. McKENZIE. Now, I did not hear the statement of Gen. Drake. How much does he propose to spend for gasoline for the Motor Transport Corps?

The CHAIRMAN. This organization supplies the gasoline——

Mr. McKENZIE (interposing). For the Motor Transport Corps?

Maj. HANNAY. No, sir; Mr. Chairman, we are not supplying it. Gen. Drake must have estimated it for himself.

The CHAIRMAN. In the hearings he gave it——

Gen. LORD (interposing). He did not state in the hearing how much he asked for gasoline, but it was in the statement which he submitted for the record.

Mr. McKENZIE. So that it will be available?

Gen. LORD. It will be available for the committee.

Mr. McKENZIE. If you will pardon me in this connection, the point I want to get at is this: If the reorganization bill which we passed in

the House should become a law, then you will be charged under that law with the purchase of all this gasoline, will you not?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. I should hope so, anyhow.

Maj. HANNAY. We are charged with the purchase of it at the present time, but as long as they remain a separate service they estimate for the quantity.

Mr. McKENZIE. You are operating now under one of the relics of the Overman Act, which is still in existence, but after the reorganization act comes into effect then the Quartermaster General's Department will take charge of all this and allot it to the different services?

Maj. HANNAY. Yes, sir. We have considered there those services which were not in the national defense act. Transportation was a part of the Quartermaster General's Corps and they estimated under Transportation of the Army. If they came back to the Quartermaster Corps they would be then an entity in the whole machine and we would use that money for supporting those activities.

Mr. McKENZIE. I am asking these questions with the hope in mind that this is the last year that we will have to have a half dozen different activities coming before us and asking for the same thing, and next year when the Quartermaster Department appears before us I hope they will have an estimate for oil.

The CHAIRMAN. Did I understand you to say that you were carrying \$110,000 of this item for the Motor Transport Corps?

Maj. HANNAY. No; for the Tank Corps. Now, to give you some idea of the total amount of gasoline, during the present year we have been buying for all these services. When they submitted their estimates for this year they asked for \$16,560,000. Our appropriation for 1920 for all the services, including the Motor Transport Corps and Air Service, was \$14,609,000.

Mr. McKENZIE. And there was not any deficit?

Maj. HANNAY. We do not know yet. We can not tell until later. I will say this about the appropriations that the Quartermaster General has handled, that I do not think there will be any deficits in any of them, but it has been due to very economical handling of the funds. Our estimates were based conservatively, as they are in this instance, only on what we thought was absolutely necessary.

The CHAIRMAN. Do you know whether you will have any balance to return to the Treasury?

Maj. HANNAY. We can not tell until the end of the fiscal year. The next item is for lubricants, and all of this is for the other three services mentioned, the Tank Corps, the Chemical Warfare Service, and the Air Service, and it involves \$308,222.

The CHAIRMAN. Do you include in that some castor oil?

Maj. HANNAY. I imagine they do, for the Air Service.

The CHAIRMAN. Are you buying any of that? I understood they had about a million gallons which they said they could never use.

Maj. HANNAY. We are not buying any castor oil at the present time, Mr. Chairman. The Air Service is not calling for any.

The CHAIRMAN. That is not involved in this sum at all?

Maj. HANNAY. No, sir. The next item is for bake ovens and apparatus, purchase and repair. That is for permanent installations at posts, \$34,000. For ice issue to organizations, \$293,605. That covers ice for all purposes. For ice for issue to offices, \$74,805. Ice for preservation of stores, \$74,805.

Mr. McKENZIE. Have you had any item included in this appropriation for the purchase of refrigerators?

Maj. HANNAY. No, sir.

Mr. McKENZIE. You have plenty of them on hand?

Maj. HANNAY. That comes under barracks and quarters, construction.

The CHAIRMAN. Take the item for ice machines. Sometimes they construe language in the Army appropriation bill in a peculiar way. Could they ever construe ice machines to include refrigerators?

Maj. HANNAY. I do not know, Mr. Chairman. That is a construction item. The next item is for laundries, construction and repair. The chief of the construction service defended part of this, but we have \$498,000 in purchase and storage, involving \$298,000 for new machinery in new laundries and \$200,000 for maintenance and repairs.

The CHAIRMAN. Well, the construction department asks for five appropriations for laundries, three of them at \$160,000 each, one at \$65,000, and one at \$42,000.

Maj. HANNAY. That is for the construction of the buildings.

The CHAIRMAN. Yes, and not for any machinery?

Maj. HANNAY. No, sir; we are buying the machinery to go in the buildings.

The CHAIRMAN. That has nothing to do with the machinery that goes into the buildings?

Maj. HANNAY. No, sir; we buy the machinery and run it. They put up the buildings.

The CHAIRMAN. What is the cost of the machinery that goes into the laundries?

Maj. HANNAY. The total cost of machinery for all of those five projects is \$620,000, but we have some laundry machinery on hand.

The CHAIRMAN. Which you can utilize?

Maj. HANNAY. Which we will utilize; but we will have to buy, in addition to that, machinery to the value of \$298,000 to make up the total value of \$620,000.

Mr. McKENZIE. If this committee should decide not to appropriate the five items mentioned by the chairman for the construction of these laundries, then we could also cut out your item?

Maj. HANNAY. \$298,000 could be cut out, but not the maintenance and repair of laundries that are already in operation.

Mr. McKENZIE. That would be worth saving.

Maj. HANNAY. There is one thing in that connection which I may bring to your attention, Mr. Chairman, and that is that now that free laundry service to enlisted men is authorized, it will cost more to have that work done by contract than to build these laundries and to operate them.

Mr. McKENZIE. Major, if I may just make a little statement here in connection with the laundry situation, it was very interesting to me. It is a question of policy whether we should maintain the laundries, especially located near cities where there are facilities for doing laundry work by civilians. I was told by a gentleman in connection with that matter when we were discussing the policy that he spent several winters in Germany, and one winter in particular he was in a city where they had a military post and that ordinarily in the summer time the civilian laundries were permitted to do the

laundry work, but in the winter time the German Government, through its military authorities, divided that laundry work out, giving to one poor woman, for instance, the laundry for three or four soldiers, not to exceed that, and in that way they divided this work out among those people and gave them employment during the stress of winter. There is a very grave question in my mind whether it is good policy for the Government to undertake to run these laundries as a military adjunct. I can understand where we might save a little money by so doing, but is the policy wise? So, I think it might be well for us to consider seriously the question of building a number of laundries.

The CHAIRMAN. Let me cite a little experience. Right out there near my home they have constructed a laundry, at Alcatraz, where the disciplinary barracks are located. The Government used to have all its laundry work done by contract for the transports and for the other organizations of the Army that need it. The laundry now does all the work for the transports, does all the work for the enlisted men, and does the work for the officers, the officers paying for their work. The saving to the Government is said to be very considerable.

Maj. HANNAY. Mr. Chairman, from our figures the cost of Government owned and operated laundries is \$1.27 per man per year. The average cost by contract is \$37.54 per man per year. Another thing that should be taken into consideration is the fact that in foreign armies they are situated in cities, dispersed through the cities, and most of our posts are out in the wilderness, in large posts like Fort D. A. Russell, and they have no facilities for doing laundry work.

The CHAIRMAN. D. A. Russell is an unhappy instance, because it is near the city of Cheyenne, where they have laundry facilities. But if you were to go down to some of the camps that are remote from the cities, of course, the situation would be much worse than it is at D. A. Russell.

Maj. HANNAY. At a post that is only a few miles out from a large city we found it very difficult to get work done.

The CHAIRMAN. I do not doubt it, but judging from the way the laundries here in Washington have raised the prices in the last year and a half, I am willing that the Government shall do its own washing.

Mr. McKENZIE. I assume that the German Government probably fixed the price of the laundry.

Maj. HANNAY. The next item is for laundries, operation and maintenance. This item is \$3,890,670. That involves only 50 per cent of the laundry being done at Government laundries at \$1.27 per man per year, the other 50 per cent being at the rate of \$37.54 per man per year by contract. When these laundries are built next year they will result in a decided decrease in cost. Then it will come down to \$1.27 instead of \$37.54 per unit.

The CHAIRMAN. Do you employ civilian labor in the laundries?

Maj. HANNAY. Yes sir.

The CHAIRMAN. About how many people have you employed?

Maj. HANNAY. I can put that in the record.

The CHAIRMAN. What is the average pay?

Statement of civilian personnel required in connection with the operation of Government-owned laundries for the fiscal year 1921, based on an Army of 175,000 men.

Civilian personnel.	Number.	Average daily wage.	Total cost.
Supervisors.....	51	\$6.81	\$108,708.03
Porters, etc.....	170	2.44	127,704.00
Office force.....	149	3.75	174,888.75
Engineers.....	158	4.00	202,286.86
Marking department.....	222	2.63	182,748.18
Washing department.....	323	3.05	308,351.95
Flat work department.....	457	2.16	308,968.56
Pressing department.....	633	2.30	435,893.90
Sorting department.....	213	2.46	164,005.74
Repair department.....	20	2.37	14,210.20
Starch department.....	76	2.31	54,050.28
Shipping department.....	149	3.00	136,911.00
			2,220,597.35

Maj. HANNAY. I will put that in the record also. The next item is soap, issue, \$226,621.

The CHAIRMAN. Does that include liquid soap or just cake soap, bar soap?

Maj. HANNAY. Just cake soap, issue soap.

Mr. McKENZIE. It includes soap for laundry use?

Mr. HANNAY. No, sir. This is a per capita cost of \$1.13 per year, and we found by experience that that is what it costs at the present price of soap per individual.

The CHAIRMAN. That is furnished to officers and men in the barracks?

Maj. HANNAY. Only to the men; the officers pay for all their supplies.

The CHAIRMAN. And they get them from the commissary?

Maj. HANNAY. Yes, sir. For toilet paper, \$110,302. That is fixed on the purchase price basis of 55 cents from past experience. For towels, \$8,423. That is for paper towels for offices.

The CHAIRMAN. For offices?

Maj. HANNAY. Yes; for offices of the government of the Army. The next item is for post schools, libraries, \$32,890.

The CHAIRMAN. What supplies are furnished?

Maj. HANNAY. All school desks.

The CHAIRMAN. Furniture?

Maj. HANNAY. Yes; furniture under this item, for the enlisted men.

Mr. McKENZIE. That is for the public schools?

Maj. HANNAY. Yes, sir; that is for the schools that they have at each post.

The CHAIRMAN. That is, if there is a noncommissioned officer or a number of noncommissioned officers whose families are with them in the post, they have a school for the children, I understand.

Maj. HANNAY. Yes; they have a school for the enlisted men and a school for the children. For officers' school, \$2,005. That is for paper and maps and anything in connection with the officers' schools. For commercial newspapers, market reports, etc., \$13,590.

The CHAIRMAN. About how many subscriptions do you have for that kind of periodicals?

Maj. HANNAY. It is fixed on an allowance of \$90 to each regiment and \$20 for each separate company; for a separate command of more than one company or less than a regiment, \$20, and for each additional company \$5. It is in regulations that provide for public libraries for enlisted men.

The CHAIRMAN. I suppose the publications include magazines and newspapers?

Maj. HANNAY. Yes, sir; periodicals. The next item is for tableware, \$274,153. Of this amount \$178,489 is for initial equipment and \$95,662 is for maintenance. That is for tableware that we were not using during the war and we have to buy a good deal of new tableware.

The CHAIRMAN. What do you use principally?

Maj. HANNAY. We use heavy crockery and plated ware of a heavy character. The next item is for mess equipment, \$131,962, initial equipment, \$51,742, maintenance, \$80,220.

The CHAIRMAN. Did you not have an enormous quantity of mess equipment during the war?

Maj. HANNAY. This is for garrison mess equipment, Mr. Chairman. It is quite different from field equipment. The very fact that the troops are going into garrison requires us to equip these garrisons with garrison mess equipment. The ranges and stoves that are in the places are not field equipment.

Mr. FIELDS. What is included in tableware, just knives, forks and spoons?

Maj. HANNAY. Well, it includes gravy boats, sugar bowls, table dishes, dinner plates, salt cellars, saucers, tumblers, and other tableware of a very heavy character.

Mr. FIELDS. I suppose you have no shortage of knives, forks, and spoons at this time?

Maj. HANNAY. We have. We have not been using them during the war. During the war they used the field equipment which they carried in their haversack, in the mess pan, but in the posts they are issued a heavy character of chinaware. During the war we bought nothing of this character.

Mr. FIELDS. I am speaking of knives, forks, and spoons and things of that kind. Have you a shortage in that class of tableware?

Maj. HANNAY. Yes, sir. It is in the same condition as the other. They have a short knife and a short fork that they carry in their haversack for field service, and they are issued a heavy type of knife and fork, lightly plated, in the barracks, and the field equipment is kept intact for field service.

Mr. McKENZIE. This particular equipment is not issued to the soldiers at all? It belongs to the post?

Maj. HANNAY. Yes, it belongs to the mess. The next item is for forage, \$13,699,570. The per capita cost of 1913 was \$40, and for 1920, from experience, based upon the number of animals, it has been \$68.31.

Mr. McKENZIE. How many animals?

Maj. HANNAY. One hundred and eighteen thousand.

Mr. McKENZIE. That includes mules and horses?

Maj. HANNAY. Yes, mules and horses of all classes, transportation and riding.

Mr. McKENZIE. Do you buy the horses for the Army now?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. Will you ask for the purchase of a considerable number this year?

Maj. HANNAY. Well, we will bring that up in the item for horses, Artillery and Cavalry. We will be asking for 14,599 horses under the Army strength of 175,000 men. That is not the total animals that will be required according to the table of organizations. It is cut down from that.

Mr. McKENZIE. We had quite an argument on that item in the last appropriation bill and the contention was that you had all the animals that you could possibly use. The Texas members, as I now recall, in particular, were very insistent about making reductions. I think the number was reduced very considerably in the House.

Maj. HANNAY. Very.

Mr. McKENZIE. And then the Senate restored the number, partially, at least. Now, if Congress should again determine that you have as many animals as you can possibly use, this forage item will be materially reduced?

Maj. HANNAY. Yes, sir; it can be reduced comparatively as the number of animals is reduced.

Mr. McKENZIE. Did you put in the per capita for each animal? I think you did.

Maj. HANNAY. Yes, sir. We have it based on the per capita per man here. All these figures are on the per capita per man for the Army.

Mr. McKENZIE. Would it be practicable to give the per capita cost by the number of animals?

Maj. HANNAY. Well, the forage cost per animal per day now is practically \$1. It is 70 cents for forage and the total cost, with overhead, is \$1.

Mr. McKENZIE. Including forage?

Maj. HANNAY. Yes, sir. To be exact, it is 67.3 cents.

Mr. GREENE. Major, is there not some such situation as this with regard to animals in the Army? That while you may have a very great number, yet the types that are most desirable in some parts of the service are still lacking in proper numbers for that service?

Maj. HANNAY. Very decidedly so. The remount service will explain that it is difficult to obtain the proper animals for the price.

Mr. GREENE. This question may better be directed to them; but is it known whether there is any prospect of disposing of the present surplus in order to secure the proper type of animals that you require at anything like the same cost?

Maj. HANNAY. They have not a sufficient supply of animals at the present time for an army of 175,000 men.

Mr. GREENE. Not at present?

Maj. HANNAY. No, sir.

The CHAIRMAN. You say you will have to purchase 18,000?

Maj. HANNAY. No, 14,000. I want to say this, that I do not believe that during the coming year this money will buy the forage for the number of animals that we already have. The quotation on March 29 was \$1.05 a bushel for oats and \$41 a ton for No. 1 timothy hay. This estimate is \$1.60 for hay and \$2.25 for oats, so that I feel that even if you do not allow any money for animals, I doubt whether this estimate will carry us through without a deficiency for the animals

now on hand in the Government. The next item is for salt for animals, \$8,223. For vinegar for animals, \$26,473.

The CHAIRMAN. That vinegar is used for cleaning the mangers?

Maj. HANNAY. Yes, for cleaning the mangers and feed boxes. For seeds for raising forage, \$14,000.

The CHAIRMAN. Where are you going to raise forage?

Maj. HANNAY. At the remount stations, Fort Reno, Fort Keogh, Front Royal, and Fort Robinson. Now, the size of those places are as follows: Reno, 9,493 acres, Keogh, 57,000 acres, Front Royal, 5,062 acres, and Robinson 23,040 acres.

The CHAIRMAN. We had quite a discussion about that when we were considering the last bill, as I recall. There was a great deal of opposition to the Government raising forage, but it was shown, I think, that Keogh was rather remote from the centers of supply and so we got by with it.

Maj. HANNAY. Both Keogh and Robinson are remote.

The CHAIRMAN. Front Royal is not?

Maj. HANNAY. No, sir. They have Government-owned land there and it would simply be a waste of that land otherwise.

The CHAIRMAN. Do you also plant seed for grass so that during certain seasons of the year the horses have green feed?

Col. SCOTT. Yes, sir. They graze about 7 months in the year.

The CHAIRMAN. That is all included in this total?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. And it is very desirable for the animals to allow them to graze?

Maj. HANNAY. Yes, sir. The next item is for implements for raising forage, \$15,000.

The CHAIRMAN. Including plows?

Maj. HANNAY. Yes, sir; and cultivators and things of that kind.

The CHAIRMAN. You have none of those on hand, I imagine?

Maj. HANNAY. No, sir; we have, of course, a few; but they are inadequate for our present purposes. They have to be purchased from year to year.

The CHAIRMAN. How much do you estimate that it saves the Government when you can raise forage and hay for the animals?

Maj. HANNAY. The total estimate covering seeds, implements, labor, and other expenses, is \$81,000 to the Government. We expect to raise at least \$200,000 worth of forage, and that has been deducted from this estimate for forage. If that is not allowed we will have to increase the amount being requested.

The CHAIRMAN. It is a good thing for us to be able to show to the House what an ultimate saving will be made by doing this thing.

Maj. HANNAY. Yes, sir. The next item is for straw for soldiers' bedding, \$72,198. We have cut this down and figured it on three months per man.

The CHAIRMAN. Did you not have a great deal of that during the war when they were at the cantonments?

Maj. HANNAY. No, sir; they never could have enough. We have to issue 30 pounds per man per month to put in the bed ticks in their bunks. Therefore you have to be constantly buying it. But we have only estimated for three months per man. The next item is for paints and oils, and they are all for the Tank Corps, the Chemical Warfare Service, and the Air Service, \$20,857 for upkeep. For

shoes for horses and mules, \$89,445. That is estimated on the basis of shoeing the animals once a month, and the per capita cost is 44.6 cents per month. In this estimate we have deducted for all horse-shoes on hand.

The CHAIRMAN. About how many horseshoes will you have to buy for the next fiscal year?

Maj. HANNAY. We require 48 shoes per horse per year. This is based on the per capita cost for shoeing; 4,800,000 shoes would be required for 100,000 animals.

The CHAIRMAN. That allows the animal to be shod once a month?

Maj. HANNAY. Yes, sir. We are not asking for any nails; we have plenty of nails. But we will have to purchase more shoes in addition to what we have on hand.

Mr. McKENZIE. Did you not have a large surplus? Were any of them sold as surplus?

Maj. HANNAY. I do not believe there were. I can put that in the record, if it is desired. For shoeing horses and mules, \$25,269. This is for the labor of shoeing animals at points where they have no blacksmith shop, for instance, at depots. For tools, tool chests, and issue outfits, the total amount is \$464,874, and of that amount the Tank Corps is asking for \$5,615 and the Chemical Warfare Service is asking for \$8,022, and Purchase and Storage is asking for \$451,237. That is for all carpenter chests, blacksmith outfits, saddler's outfits, and commissary chests; not all carpenter tools, just those chests that are issued to all organizations, all companies.

The CHAIRMAN. I have here the hearing of last year, which contains a complete comparative statement for regular supplies, but I see nothing in that statement making an allowance for tools.

Maj. HANNAY. It was asked for under hardware and tools last year.

The CHAIRMAN. They have two items here, heavy hardware and light hardware.

Maj. HANNAY. It was under light hardware.

The CHAIRMAN. How much are you asking for under this appropriation?

Maj. HANNAY. This is \$464,874.

The CHAIRMAN. You did not ask for anything last year?

Mr. McKENZIE. Are these tools and chests and outfits for the use of the construction corps?

Maj. HANNAY. No, sir; they are for issue to organizations. They formerly had about 18 or 20 different kinds of sets of tools. They have now coordinated and standardized the sets until I think they have 7, or they are trying to get it down to 7, and these are all the new types, so that it will eventually be a great saving to the Government by eliminating so many different types of tools. The Engineer Department had one kind, the quartermaster furnished another kind to troops, and they were all different.

Mr. McKENZIE. For example, they will all have the same kind of hammer, is that the idea?

Maj. HANNAY. Yes; and instead of the Engineers having a tool box for a company that was this long [indicating] and had certain instruments in it, and a company of Infantry having a tool box that was this long [indicating] with other instruments in it, they will have one standard chest for both purposes.

The CHAIRMAN. I see that last year we allowed you about \$300,000, in round numbers, on this item.

Maj. HANNAY. Yes, sir.

The CHAIRMAN. You are asking for \$400,000?

Maj. HANNAY. Yes, sir. We had a lot on hand then, Mr. Chairman, which have been used up to a great extent.

The CHAIRMAN. But you also had a great many more men than you will have next year?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. Major, these tool boxes and tools are company and organization material?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. They are not issued to any particular individual?

Maj. HANNAY. No, sir.

Mr. McKENZIE. They are issued to the company. Is that it?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. And each Infantry company will be entitled to one of these boxes. Is that the idea?

Maj. HANNAY. Yes, sir.

Mr. McKENZIE. Now, of course, they are all supplied at the present time with a certain kind of tool box and certain tools, are they not?

Maj. HANNAY. I do not think they have their organization equipment in a good many of these things, Mr. McKENZIE. They are just sort of finding themselves now in regard to things of this nature. This is to equip them. We find that we have not got them on hand in stock to supply them. Storage reports that they are not on hand and we have to supply them with this equipment.

Mr. McKENZIE. Do you have requisitions in your department asking for this material?

Maj. HANNAY. We get requisitions every day in the storage department. For instance, here are some of the chests that are furnished. There is the commissary chest, with contents, the saddlers' chest, the blacksmith's chest, the carpenter's chests for companies, etc.

Mr. McKENZIE. Those saddlers' chests would be only for——

The CHAIRMAN (interposing). Artillery.

Maj. HANNAY. Artillery and Cavalry. Each troop and battery would have them. Then they have the band repair tool set.

The CHAIRMAN. You may proceed with the items, Major.

Maj. HANNAY. The next item is for rope and cordage. The total is \$6,217, for the Tank Service and the Chemical Warfare Service.

The CHAIRMAN. Have you not sufficient rope on hand without purchasing any additional rope?

Maj. HANNAY. We have ropes, but not the size required for these purposes in these amounts, \$3,008 for the Tank Corps and \$3,209 for the Chemical Warfare Service. The next item is for stationery and office supplies. This item is for \$701,925. The per capita cost on stationery for the Army in 1913, we find, was \$1.17; in 1914 it was \$1.08. During this year to date, the fiscal year 1920, it has been \$1.

The CHAIRMAN. And the Red Cross and the Knights of Columbus and the other welfare workers furnishing large quantities of paper free?

Maj. HANNAY. This is not for the enlisted men, Mr. Chairman.

The CHAIRMAN. This is for offices?

Maj. HANNAY. Yes, sir; other than those provided in the sundry civil bill. It shows an increase in the actual quantity of paper used in the Army of 100 per cent since 1913.

The CHAIRMAN. What kind of paper?

Maj. HANNAY. Office stationery and articles of stationery in connection therewith. The price of paper has advanced 74 per cent in that time, the average price of stationery.

The CHAIRMAN. And our increase as proposed now, is about 300 per cent?

Maj. HANNAY. Yes; our quantity increase is 100 per cent per man.

Mr. GREENE. Is that stationery properly figured on a property basis? What relation does it have to the number of people in the Army?

Maj. HANNAY. It has none. We were directed to figure these estimates on a per capita basis so that we would have some basis for them.

Mr. GREENE. Perhaps the greater bulk of that is literally stationery overhead. It would be just so much paper work and so many forms to be employed, whether the organizations were full or not?

Maj. HANNAY. This just means that we have increased their paper work by 100 per cent.

Mr. GREENE. That is probably what we are getting at.

Maj. HANNAY. The next item is for office furniture, \$169,363. Most of this is for office furniture for inspectors and instructors on duty with the National Guard.

The CHAIRMAN. How much on the average does the furniture for each office cost? There are 48 of those offices, I take it, one in each State?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. That seems to me a considerable allowance.

Maj. HANNAY. There was a letter from The Adjutant General dated October 27, 1919, directing that estimates be submitted for office equipment for 75 officers and 650 enlisted men engaged on this work.

The CHAIRMAN. Seventy-five officers and 650 enlisted men?

Maj. HANNAY. Yes, sir.

Mr. FIELDS. Why is it necessary to buy furniture when there is so much furniture on hand?

Maj. HANNAY. We are constantly getting requests for furniture that we can not supply.

Mr. FIELDS. What has become of all this great amount of furniture all over the country?

Gen. ROGERS. I think the majority of the excess furniture that has been handled by the War Department, the Quartermaster, Purchase and Storage, has been turned over to this General Supply Committee here in Washington for use in the other bureaus of the Government, and that saves their buying. I know a great deal has been turned over in that way.

The CHAIRMAN. I think the Army, where it has purchased it, ought to be given credit for the distribution of that material to other departments, because the Army is going to buy more and will be charged with the new outlay in the Military Establishment.

Gen. ROGERS. We do a lot of things, Mr. Chairman, that we do not get credit for.

The CHAIRMAN. I think that ought to be explained in this item.

Mr. FIELDS. That is the reason I brought that up, because I know that question will come up on the floor. There is a lot of discussion about surplus office furniture.

Gen. ROGERS. We can furnish the committee with the amount of surplus furniture that has been turned over to the Supply Committee.

The CHAIRMAN. I wish you would, General, because, as Mr. Fields says, we will be asked about it, and then, too, there is a principle involved. The original appropriation was taken from Army funds, and here we have men constantly talking about the cost of the Army. If that material had been held in reserve we would not have to make this new appropriation, but now we are called upon to make it by reason of the fact that you have not been able to hold it in reserve. You ought to be able to give us a little statement about how much of this stuff you have turned over to the other departments and the value of it.

Gen. ROGERS. We can very easily do that.

Statement of office furniture declared surplus and turned over to General Supply Committee and to Director of Sales.

Articles.	Unit.	Quantity.	Value.
Turned over to General Supply Committee:			
Baskets, waste paper.....	Number..	48	\$16.00
Bands, rubber.....	Pounds..	200	340.00
Chairs.....	Number..	690	5,806.00
Desks.....	do.....	554	15,980.95
Cabinets, file.....	do.....	24	666.00
Costumers.....	do.....	15	45.00
Furniture, miscellaneous.....			30,534.50
Do.....	Pieces..	215	2,969.95
Stands, typewriter.....	Number..	12	108.00
Tables.....	do.....	6	105.00
Typewriters.....	do.....	180	11,892.00
Total.....			68,423.40
Turned over to Director of Sales:			
Baskets, waste paper.....	Number..	7,977	2,054.25
Baskets, desk.....	do.....	457	458.00
Chairs.....	do.....	223	1,945.90
Desks.....	do.....	283	10,672.67
Furniture, miscellaneous.....	Pieces..	1,863	35,474.50
Cabinets, filing.....	Number..	2	92.50
Cabinets, sections.....	do.....	8	95.30
Files, arch.....	do.....	1,424	704.00
Stands, ink.....	do.....	2,000	140.00
Tables.....	do.....	57	1,753.00
Typewriters.....	do.....	28	4,095.00
Settees.....	do.....	2	56.00
Total.....			57,536.12

The CHAIRMAN. Thank you. You may proceed, Maj. Hannay.

Maj. HANNAY. The next item is for blank forms, \$70,192.

The CHAIRMAN. Do you get those printed at the Government Printing Office?

Maj. HANNAY. Yes, sir; all of these, except in those cases where we get permission from the Joint Committee on Printing for outside printing. For certificates for discharged soldiers, \$2,407.

The CHAIRMAN. Do you know anything about these certificates, Major? You know there was a great deal of complaint about certificates that were given out to the men who had been in the training camps when the war closed but who had not been fully trained. They were in the Army. They were given a kind of certificate that occasioned a great amount of criticism and complaint. It was the same kind of certificate that was given to conscientious objectors and alien enemies and all that class, and The Adjutant General told me that they were working on a different form. You do not know anything about that, do you?

Maj. HANNAY. No, sir. This is simply for the regular certificate of discharge that is issued to all enlisted men. The next item is for printing, \$465,276.

Mr. McKENZIE. Where do you have your printing done?

Maj. HANNAY. At the Government printing plant.

Mr. McKENZIE. At the Government Printing Office?

Maj. HANNAY. Yes; except—

The CHAIRMAN (interposing). They have to, under the law, except where they are given special permission to have it done outside.

Maj. HANNAY. Yes, sir; that is it, exactly. There are two items here which cover reserve officers' training camp equipment. We have for equipment, \$275,622, and forage \$302,043. Those are the estimates made by the officer in charge of that work in the War Department. That is, the quantities, and we supply the prices.

Mr. McKENZIE. Those items were discussed?

Maj. HANNAY. I imagine Col. Morrow discussed it. They are included in the total. We have another item for cleaning and preserving material. This was formerly in the Ordnance Department and it is added now to regular supplies.

The CHAIRMAN. You mean this slush stuff that they have?

Maj. HANNAY. Yes; cosmoline, and all those things, preservative paint and all those things for the care and preservation and cleaning of guns, rifles, etc.

The CHAIRMAN. Has not the Ordnance Department an enormous quantity of that stuff still on hand?

Maj. HANNAY. No, sir; we are constantly buying it now. We have had to buy a great deal of such compounds for the care and protection of the Liberty engines.

The CHAIRMAN. We were told by the Ordnance officers that the engine would be covered or the machinery would be covered and then make a trip on the cars or on the vessel, and a good part of it would have worn off by the time it reached some destination, and then the work would have to be done again.

Mr. HANNAY. Yes, sir. They have used enormous quantities in caring for and storing these Liberty engines. That is the last item, Mr. Chairman.

The CHAIRMAN. Thank you very much.

(Thereupon, at 6 o'clock p. m., the subcommittee adjourned until to-morrow, Friday, April 2, 1920, at 10.30 a. m.)

SUBCOMMITTEE OF THE COMMITTEE
ON MILITARY AFFAIRS,
HOUSE OF REPRESENTATIVES,
Friday, April 2, 1920.

The subcommittee met at 10.30 o'clock a. m., Hon. Julius Kahn (chairman) presiding.

The CHAIRMAN. The next item for the Quartermaster General's Department is that in reference to clothing, and camp and garrison equipage, on page 31.

Gen. LORD. Mr. Chairman, I think Maj. Hannay would like to return for a moment to the item for Subsistence of the Army, on page 20.

STATEMENTS OF MAJ. GEN. H. L. ROGERS, QUARTERMASTER GENERAL, LIEUT. COL. C. L. SCOTT, AND MAJ. J. R. R. HANNAY, PURCHASE AND STORAGE DIVISION, QUARTERMASTER GENERAL'S DEPARTMENT—Continued.

Maj. HANNAY. I wish, Mr. Chairman, simply to submit to the committee a revised text to cover the rations at the United States Military Academy. In the act providing for the fiscal year 1920 it was 68 cents per ration, and that has been increased by Congress to \$1.08, and we would like to have that go into the text this year.

The CHAIRMAN. You are not changing anything—

Maj. HANNAY (interposing). Except changing the 68 cents to \$1.08. Before we go ahead with the item of clothing, camp and garrison equipage, I should like to submit one thing in conclusion of my statement in reference to regular supplies, and that is this, that the appropriation for the fiscal year 1920, which was for purchase and storage activities, was \$75,227,000, and the appropriation requested this year is \$34,313,000. The per capita cost for 1920 is \$345, and the per capita cost in this estimate is \$171.

Mr. McKENZIE. That reduction is the result of disposing of a large amount of the surplus material you had to keep in storage?

Maj. HANNAY. No, sir. You can not ascribe it to that. It is due, for one thing, to the elimination of the amount for gasoline for the Motor Transport Corps, which you have included in another appropriation, and partially to the fact that we have bought some of the necessary things for peace-time maintenance from this year's appropriation. We have cut that down.

The CHAIRMAN. Of course, the reduction is so large that it can not be due to gasoline alone, because the amount allowed last year for gasoline, as I recall, was a total of about \$16,000,000.

Maj. HANNAY. Yes, sir. We had, as I remember it, over \$14,000,000 in our estimate for gasoline last year.

Mr. McKENZIE. Did I understand you to say that last year the total amount was \$75,000,000?

Maj. HANNAY. For purchase and storage activities expenditures, made from regular supplies. The only other service included was construction.

Mr. McKENZIE. In using the word activities, would that include the payment of rentals for storage?

Maj. HANNAY. No, sir.

Mr. McKENZIE. That comes under another item?

Maj. HANNAY. Yes, sir; under the item for clothing, camp and garrison equipage for an army of 175,000 men the aggregate amount asked for is \$26,982,645.

Gen. LORD. That amount has been approved by the Secretary of War.

Maj. HANNAY. For 200,000 men the amount is \$29,601,760.

The CHAIRMAN. You may insert in the record the amounts for the other strengths of the Army.

ARMY APPROPRIATION BILL, 1921.

Estimate for clothing, camp and garrison equipage for fiscal year 1921.

Article.	Unit.	Estimated stock on hand June 30, 1920.	Maintenance for 175,000 men and 100,000 men R. O. T. C.	Maintenance for 200,000 men and 100,000 men R. O. T. C.	Maintenance for 225,000 men and 100,000 men R. O. T. C.	Unit cost.	Cost for 175,000 men and 100,000 men R. O. T. C.	Total cost for 200,000 men and 100,000 men R. O. T. C.	Total cost for 225,000 men and 100,000 men R. O. T. C.
Aprons, bakers', butchers', and cooks'.	Each.	372,297	15,041	17,010	18,979	\$0.77			
Badges, campaign.	do.		41,400	45,360	50,610	1.00	\$41,400.00	\$45,360.00	\$50,610.00
Belts, waist.	do.	168,334	300,550	326,800	353,050	2.3	30,409.88	36,447.18	42,484.88
Boots, rubber, hip.	Pair.	16,692	5,014	5,670	6,326	6.15			
Boots, rubber, knee.	do.	167,657	5,014	5,670	6,326	4.00			
Braid, forest green.	Yard.		4,011	4,536	5,061	1.15	601.65	680.40	759.15
Breeches, cotton, olive drab.	Pair.	3,541,676	300,825	340,200	381,500	1.90	450,990.00	498,240.00	545,480.00
Breeches, woolen, olive drab.	do.		501,100	553,600	606,100	1.90	450,990.00	498,240.00	545,480.00
Breeches, kersey.	do.		2,008	2,268	2,531	1.48	2,968.88	3,356.64	3,745.88
Caps, bakers', butchers', and cooks'.	Each.	183,196	15,041	17,010	18,979	1.35	405,742.50	441,180.00	476,617.50
Caps, service.	do.		300,550	326,800	353,050	1.10	220,605.00	249,480.00	278,355.00
Caps, winter.	do.		200,550	226,800	253,050	1.10	252,462.00	274,512.00	296,562.00
Chevron, assorted.	do.	901,650	901,650	980,400	1,059,120	28	24,000.00	24,000.00	24,000.00
Clothing, for warrant officers, mine planter service.	Per man.	120	120	120	120	200.00			
Clothing, outfit, civilian, for discharged prisoners.	Each.		4,000	4,000	4,000	26.00	100,000.00	100,000.00	100,000.00
Coats, cotton, olive drab.	do.	1,950,684	200,550	226,800	253,050	1.00	114,209.00	124,184.00	134,159.00
Coats, denim.	do.		300,550	326,800	353,050	1.38	12,639.42	14,628.60	16,321.08
Coats, oliskin.	do.		4,899	5,670	6,326	2.58	460,612.64	515,343.89	570,075.14
Coats, woolen, olive drab.	do.	66,449	400,825	440,200	479,575	1.35	180,485.00	204,120.00	227,745.00
Collars.	do.		1,203,300	1,360,800	1,518,300	.09	66,121.00	71,896.00	77,671.00
Cords, lat, assorted.	do.	5,085,860	401,100	453,600	506,100	.22			
Cravats.	do.		300,550	326,800	353,050	.60			
Drawers, summer.	Pair.	7,552,872	601,650	690,400	768,750	2.00			
Drawers, winter.	do.	6,187,374	401,100	453,600	479,575	1.07			
Gloves, heavy leather.	do.	604,753	200,550	226,800	253,050	.65			
Gloves, woolen, olive drab.	do.	2,578,878	300,550	326,800	353,050	.11	132,363.00	149,688.00	155,925.00
Handkerchiefs.	do.		1,203,300	1,360,800	1,518,300	.42			
Hats, denim.	Each.	1,683,123	501,100	553,600	606,100	.75			
Hats, oliskin.	do.	8,257	4,999	5,670	6,326	2.00			
Hats, service.	do.	687,943	300,25	340,200	379,575	.02	1,956.16	2,041.20	2,277.46
Helmets, woolen, or mullers and toques.	Pair.	1,612,509	97,808	102,060	113,873	.08	36,099.00	40,824.00	45,549.00
Laces, leggings, extra pairs.	do.		1,203,300	1,360,800	1,518,300	1.09	915,057.00	1,013,232.00	1,156,407.00
Laces, shoe.	do.	404,427	66,165	68,040	75,916	2.20			
Leggings, mounted, canvas.	do.		415,933	460,560	525,185	14.00			
Leggings, puttees, woolen, spiral.	do.		5,014	5,670	6,326	1.25			
Mackinaws, woolen, olive drab.	Each.	96,538	200,550	226,800	253,050	.04	13,022.00	14,008.00	15,490.00
Mittens.	Pair.	2,621,391	326,800	353,200	389,500	.04	15,022.00	16,008.00	17,490.00
Ornaments, cap.	Each.								
Ornaments, collar.	Set.		375,480	415,200	456,500	.04			

Overcoats, woolen, olive drab.	Each.	100,275	113,400	126,525	1	2.00	200,560.00	228,800.00	283,060.00
Overhoes, arctic.	Pair.	20,055	22,680	26,305	3	75			
Raincoats, foot.	Each.	141,005	160,650	179,245	6	75	951,790.50	1,094,387.50	1,200,890.25
Raincoats, mounted.	do.	25,099	28,350	31,611	7	50	188,017.50	212,025.00	237,232.50
Ribbons, campaign.	do.	6,023	9,073	10,128	1	05	401.10	408.60	500.10
Shirts, cotton, olive drab.	do.	200,500	225,800	253,000	1	35	70,192.80	76,380.00	83,567.50
Shirts, flannel, olive drab.	do.	501,100	533,600	606,100	1	47			
Shoes, garrison.	do.	725,200	805,400	870,150	7	00	5,489,375.00	6,040,500.00	6,526,125.00
Shoes, gymnasium.	do.	200,560	225,800	253,000	3	00	701,925.00	785,800.00	855,675.00
Stockings, heavy wool.	do.	1,305,300	1,460,800	1,615,300	58		245,092.54	279,742.54	314,362.54
Stockings, light wool.	do.	962,640	1,087,640	1,214,640	55				
Suspenders.	do.	40,110	45,360	50,610	35				
Sweaters, olive drab.	Each.	65,350	72,100	80,850	5	35	14,083.50	15,875.00	17,713.50
Type, for identification bags.	Yards.	325,560	351,800	378,050	1	005	376,982.50	428,995.00	481,087.50
Trousers, denim.	Pair.	200,560	225,800	253,000	1	35	1,627.75	1,789.00	1,950.25
Trousers, oaktan.	do.	4,899	5,670	6,328	2	58	76,209.00	86,154.00	96,156.00
Undershirts, cotton.	do.	7,550,174	8,390,000	9,239,875	2	00	9,707.88	11,754.05	13,446.54
Undershirts, winter.	do.	401,100	433,600	506,100	2	00			
Miscellaneous articles of clothing necessary to balance stock in sizes.	Per man	300,825	340,200	379,375	5	00	1,502,750.00	1,634,000.00	1,765,250.00
Clothing, Alaskan.	do.	500	500	500	100	00	50,000.00	50,000.00	50,000.00
Clothing, nurses.	do.	200	200	200	250	00	50,000.00	50,000.00	50,000.00
Findings for manufacturing clothing.	Per man				1	50	450,825.00	490,200.00	529,575.00
Total.							13,806,270.70	15,326,838.61	16,787,207.57
Aprons, blacksmith.	Each.	5,000	5,000	5,000	2	75	13,750.00	13,750.00	13,750.00
Bags, barrack.	do.	100,275	113,400	126,525	6	00			
Bags, surplus kit.	do.	5,114	5,670	6,328	10	00	1,670.00	1,670.00	1,670.00
Bags, water, pack mule.	do.	200	200	200	12	75	11,373.00	11,373.00	11,373.00
Bags, water, sterilizing.	do.	1,667	1,667	1,667	4	65			
Bars, mosquito.	do.	100,275	113,400	126,525	10	00	200,560.00	225,800.00	253,000.00
Bedsteads, single, iron.	do.	20,055	22,680	25,305	8	00			
Blankets, olive drab.	do.	100,275	113,400	126,525	13	13	19,789.48	22,210.94	25,622.48
Brassards, assorted.	do.	200,550	225,800	253,000	24	00	224,616.00	254,000.00	291,816.00
Brooms, corn.	do.	280,770	317,500	364,770	8	00		940.00	
Brooms, clothes.	do.	25,099	28,350	31,611	4	00			
Brushes, hair.	do.	66,849	75,600	84,350	40				
Brushes, scrubbing.	do.	194,334	219,996	245,658	30		35,906.80	43,998.20	49,091.80
Brushes, shaving.	do.	66,849	75,600	84,350	25		16,712.25	18,000.00	21,087.50
Brushes, shoe.	do.	66,849	75,600	84,350	40		20,065.20	22,680.00	25,305.20
Brushes, tooth.	do.	66,849	75,600	84,350	17				
Bugles, with slings.	do.	3,520	3,520	3,520	4	00	14,080.00	14,080.00	14,080.00
Cases, pillow.	do.	401,100	433,600	506,100	225		94,256.50	105,846.00	118,933.50
Chairs, barrack.	do.	20,055	22,680	25,305	2	25	45,122.75	51,000.00	56,966.25
Colors, camp.	do.	1,000	1,000	1,000	1	63			
Colors, national, silk.	do.	40	40	40	24	52	980.80	980.80	980.80
Colors, national, service.	do.	600	600	600	8	22			
Colors, regimental, Engineer, silk.	do.	13	13	13	170	45	2,045.40	2,045.40	2,045.40

1 Cost of manufacture only. Sufficient material on hand.

[illegible]

Estimate for clothing, camp and garrison equipage for fiscal year 1921—Continued.

Article.	Unit.	Maintenance for 175,000 men and 100,000 men R. O. T. C.	Maintenance for 200,000 men and 100,000 men R. O. T. C.	Maintenance for 225,000 men and 100,000 men R. O. T. C.	Unit cost.	Cost for 175,000 men and 100,000 men R. O. T. C.	Total cost for 200,000 men and 100,000 men R. O. T. C.	Total cost for 225,000 men and 100,000 men R. O. T. C.
Tent hospital.....	Each.....	1,570	100	100	\$92.15	.....	.....	.....
Tent pyramidal large.....	.....	6,620	7,143	8,743	125.00	.....	.....	.....
Tent shelter half.....	do.....	713,026	185,375	211,100	2.82	.....	.....	.....
Tent storage.....	do.....	10,631	100	100	136.11	.....	.....	.....
Tent wall large.....	do.....	2,882	200	200	80.08	.....	.....	.....
Tent wall small.....	do.....	27,961	1,667	1,667	43.71	.....	.....	.....
Tent ward.....	do.....	.....	1,150	1,150	227.19	.....	.....	.....
Towels.....	do.....	7,855,148	401,100	506,100	30	.....	.....	.....
Whistle and chain.....	do.....	.....	33,000	33,000	.38	.....	.....	.....
Total.....	.....	.....	.....	.....	.....	5,469,515.53	6,030,323.96	6,599,173.07

Estimate for ordnance stores and supplies transferred to Purchase and Storage Service by the Ordnance Department.

Article.	Unit.	Quantity.	Unit cost.	Total cost.	Remarks.
Badges, expert machine gunner, silver.	Each....	5,000	\$1.51	\$7,550.00	Based on previous consumptions.
Badges, expert rifleman, silver.	...do....	25,000	1.25	31,250.00	Do.
Badges, gold.	...do....	1,000	30.00	30,000.00	For issue to distinguished marksmen and to successful competitors in departmental and national matches.
Badges, sharpshooter, machine gun, silver.	...do....	10,000	1.25	12,500.00	Based on previous consumptions.
Badges, sharpshooter, silver.	...do....	100,000	1.10	110,000.00	Do.
Badges, pistol expert, silver.	...do....	4,000	1.00	4,000.00	Do.
Bags, musette.	...do....	20,000	4.00	80,000.00	Submitted in accordance with instructions of director of operations; new equipment for officers, Jan. 6, 1920, copy attached.
Bars, requalification, silver.	...do....	10,000	.50	5,000.00	Based on previous consumption.
Covers, saddle.	...do....	40,000	4.00	160,000.00	None on hand.
For experimental purposes.	.....			50,000.00	
For miscellaneous hardware, material and supplies for the maintenance of horse equipment of Cavalry and Field Artillery.	.....			455,000.00	10 per cent of value of equipment.
For miscellaneous materials, hardware and supplies for the maintenance of individual equipment of Infantry, Cavalry, and Artillery.	.....			455,000.00	Do.
Pins, marksman, machine gun, silver.	Each....	10,000	.75	7,500.00	Based on previous consumption.
Pins, marksman, silver.	...do....	50,000	.75	37,500.00	Do.
Pins, pistol shot, first class, silver.	...do....	10,000	.60	6,000.00	Do.
New Cavalry equipment.	Sets....	31,675	100.00	3,167,500.00	25 Cavalry regiments at 1,267 men per regiment submitted in accordance with instructions from director of operations, Sept. 11, 1919; copy attached.
Sacks, harness.	Each....	30,000	6.00	180,000.00	For issue to Artillery organizations.
Tags, for marking personal equipment.	...do....	2,990,000	.01	29,900.00	10 per man per year.
Total.	.....			5,143,000.00	

Salvaging of clothing and equipage.

	Cost of Army of 175,000.	Cost of Army of 200,000.	Cost of Army of 225,000.
For salvaging clothing and equipage, for enlisted men, including the clothing and equipage turned in by enlisted men who were discharged. This estimate is based on the estimate submitted for the fiscal year 1920 and which has proved to be correct. In addition to salvaging, cleaning, and repairing the clothing of enlisted men in the service, it is necessary to salvage, clean, and repair the clothing turned in by enlisted men who were discharged, in order to make it suitable for sale or reissue.			
	\$2,563,859.10	\$3,101,598.28	\$3,789,348.98
Total for clothing.	13,806,270.70	15,326,838.61	16,787,207.57
Total for equipage.	5,469,515.58	6,050,323.95	6,594,173.07
Total for salvage.	2,563,859.10	3,101,598.28	3,789,348.98
Grand total.	21,839,645.33	24,458,760.85	27,065,729.62
Total required for Ordnance Stores and Supplies, transferred to the Purchase and Storage Service by the Ordnance Department, as shown by attached list.	5,143,000.00	5,143,000.00	5,143,000.00
Aggregate.	26,982,645.33	29,601,760.85	32,238,729.62

Estimate for clothing, camp and garrison equipage, fiscal year 1921.

FOR ARMY OF 200,000 MEN.

Article.	Unit.	Estimated stock on hand June 30, 1920.	Maintenance for 200,000 men.	Net requirements.	Unit cost.	Total cost.	Remarks.
Aprons, bakers', butchers', and cooks' Badges:	Each.	372,297	22,425		\$0.77		
Campaign Waist.	.do.		59,800	59,800	1.00	\$59,800.00	One-fifth per man.
Woolen, olive drab.	.do.	168,334	299,000	230,666	.23	53,053.18	1 per man per year, 100,000 for Reserve Officers' Training Corps.
Rubber, hip.	Pair.	16,892	7,475		6.15		
Rubber, knee.	.do.	167,657	7,475		4.00		
Braid, forest green.	Yard.		5,980	5,980	.15	897.00	One-fiftieth yard per man.
Breeches:							
Cotton, olive drab.	Pair.	3,541,676	448,500		1.90		Covers cost of manufacture only, 14 per man per year.
Woolen, olive drab.	.do.		698,000	698,000	1.90	628,200.00	Covers cost of manufacture only, 2 per man per year; 100,000 for Reserve Officers' Training Corps.
Kersey.	.do.		2,990	2,990	14.43	4,425.20	Covers cost of manufacture for motorcycleists only.
Cape:							
Bakers', butchers', and cooks' Service.	Each.	183,196	22,425		.20		
Woolen, olive drab.	.do.		399,000	399,000	1.33	538,650.00	Covers cost of manufacture only, 100,000 for Reserve Officers' Training Corps.
Winter.	.do.		299,000	299,000	1.10	328,900.00	Covers cost of manufacture only.
Chevrone, assorted.	.do.		897,000	897,000	.23	251,160.00	3 per man per year.
Clothing:							
For warrant officers, mine planter service.	Per man.		120	120	200.00	24,000.00	
Outer civilian, for discharged prisoners.			4,000	4,000	25.00	100,000.00	
Costs:							
Cotton, olive drab.	Each.	1,950,684	299,000		1.10		Covers cost of manufacture only; 100,000 for Reserve Officers' Training Corps.
Denim.	.do.		302,100	302,100	1.33	114,798.00	Covers cost of manufacture only; 3,100 for Reserve Officers' Training Corps.
Olakin.	.do.		4,975	4,975	2.56	12,836.80	For motor cyclist and chauffeurs, 1 per man per year.
Woolen, olive drab.	.do.	69,449	548,500	479,051	1.39	665,880.89	For motor cyclist and chauffeurs, 100,000 for Reserve Officers' Training Corps. Cost of manufacture only.
Collars.	.do.		1,794,000	1,794,000	.15	269,100.00	6 per man per year. New item.
Cords, hat, assorted.	.do.		299,000	299,000	.09		
Cavalry.	.do.	6,085,800	899,000	899,000	.23	87,780.00	100,000 for Reserve Officers' Training Corps.
Drawers:							
Summer.	Pair.	7,552,872	897,000		.60		3 per man per year.
Winter.	.do.	6,157,374	598,000		3.00		2 per man per year.

Estimate for clothing, camp and garrison equipage, fiscal year 1921—Continued.

FOR ARMY OF 299,000 MEN—Continued.

	Unit.	Estimated stock on hand June 30, 1920.	Maintenance for 299,000 men.	Net requirements.	Unit cost.	Total cost.	Remarks.
Trousers:							
Denim.....	Pair.....		302,100	302,100	\$ 0.38	\$114,798.00	1 per man per year. 3,100 for Reserve Officers' Training Corps; cost of manufacture only. For nine planters' service only.
Oilskin.....	do.....	1,113	440		2.58		
Undershirts:							
Cotton.....	Each.....	7,550,174	598,000		.60		2 per man per year.
Winter.....	do.....	5,815,386	448,500		2.00		14 per man per year.
Miscellaneous articles of clothing necessary to balance stock in sizes.			399,000	399,000	5.00	1,995,000.00	Reserve Officers' Training Corps included.
Clothing:							
Alaskan.....			500	500	100.00	50,000.00	
Nurses'.....			200	200	250.00	50,000.00	
Findings for manufacturing clothing.....			399,000	399,000	\$ 1.50	598,500.00	Reserve Officers' Training Corps included.
Total, \$20,418,217.06.							

FOR ARMY OF 229,000 MEN.

Aprons, blacksmith.....	Each.....	5,980	5,980		\$2.75	\$16,445.00	One-fiftieth per man per year.
Bags:							One-half per man per year.
Barrack.....	do.....	1,490,069	149,500		.73		25 per 1,000 men per year.
Surplus kit.....	do.....	103,303	7,475		6.00		Based on consumption during previous year.
Water, pack mule.....	do.....	13	200	187	10.00	1,870.00	1 for every 150 men per year.
Water, sterilizing.....	do.....	775	1,993	1,218	12.75	15,529.50	One-half per man per year.
Bar, mosquito.....	do.....	1,224,066	149,500		4.65		1 per 10 men per year. Plus initial equipment of 69,100.
Bedsteads, single, iron.....	do.....		99,000	99,000	10.00	990,000.00	One-half per man per year.
Blankets, olive drab.....	do.....	1,391,093	149,500		8.00		One-half per man per year.
Brooms, assorted.....	do.....	46,254	299,000	299,746	.13	32,666.98	1 per man per year.
Brooms, corn.....	do.....		448,500	448,500	.80	358,800.00	14 per man per year. See per. 1181, Army Regulations.
Brushes:							
Clothes.....	do.....	26,000	37,375	11,375	.40	4,550.00	1 per 8 men per year.
Ear.....	do.....	342,000	99,667		.40		One-third per man per year.
Scrubbing.....	do.....		299,000	299,000	.20	59,800.00	1 per man per year. Per. 1181, Army Regulations.
Shaving.....	do.....		99,667	99,667	.25	24,916.75	One-third per man per year.
Shoes.....	do.....		74,750	74,750	.40	29,900.00	2 per 8 men per year.
Tooth.....	do.....	428,000	299,000		.17		1 per man per year.

Bugles, with slings.....	do.	3,000	3,000	4.00	12,360.00	1 per 100 men per year; 100 Reserve Officers' Training Corps.
Cases, pillow.....	do.	598,000	598,000	.235	140,530.00	2 per man per year.
Chairs, barrack.....	do.	29,000	29,000	2.25	67,275.00	One-tenth per man per year.
Covers:						
Camp.....	do.	30,207	1,000	1.03	1,029.94	8 per regiment per year.
National, silk.....	do.	1,585	625	24.32	15,280.00	One-third per regiment per year.
National, service.....	do.			8.23		1 per regiment per year, 600 for Reserve Officers' Training Corps.
Regimental, Engineers' silk.....	do.		10	170.45	1,704.50	1 per regiment, New design.
Regimental, Infantry, silk.....	do.		65	150.43	9,777.95	Do.
Combs.....	do.	536,000	49,533	5.00	249,165.00	One-third per man per year.
Cots, canvas.....	do.					One-sixth per man per year.
Covers:						
Mattress.....	do.	43,470	255,530	1.30	332,189.00	1 per man per year.
For ward tents.....	do.		299	12.18	3,641.82	1 per 1,000 men per year; 400 for Reserve Officers' Training Corps.
Decks, field.....	do.		1,307	15.00	32,605.00	1 per 300 men per year; 800 for Reserve Officers' Training Corps.
Dubblin.....	Pounds	187,500	36,750	.24	8,820.00	1 pound per man per year.
Experimental purposes.....					75,000.00	Preparing drawings, designs, dies of new quarter-master equipment, etc.
Flags:						
Auto—						
Brigadier general.....	Each	87		.77		2 per brigadier general per year.
Major general.....	do.	108		.85		2 per major general per year.
Camp of instruction, Infantry division.....	do.		24	26.00	624.00	2 per division per year.
Dispatching—						
Chaplain.....	do.		150	.81	121.50	1 per chaplain per year.
Field Artillery brigade.....	do.		24	2.64	63.36	2 per Artillery brigade per year.
Infantry brigade.....	do.		45	2.69		2 per Infantry brigade per year.
Ammunition train.....	do.		24	2.32	55.68	2 per ammunition train per year.
Infantry company.....	do.		1,000	1.75	1,750.00	1 per Infantry company per year.
Infantry division.....	do.		24	2.95		2 per Infantry division per year.

1 Covers cost of manufacture only.

* Per man.

Estimate for clothing, camp and garrison equipage, fiscal year 1921—Continued.

FOR ARMY OF 200,000 MEN.

Article.	Unit.	Estimated stock on hand June 30, 1920.	Maintenance for 200,000 men.	Net requirements.	Unit cost.	Total cost.	Remarks.
Flags:							
Distinguishing, machine-gun battalion.	Each.		\$72	\$72	\$2.25	\$162.00	2 per machine-gun battalion per year.
Distinguishing—							
Red Cross.	do.	912	5,000	4,088	2.35	9,536.30	For ambulances and field hospitals.
Reserve Officers' Training Corps.	do.		600	600	2.25	3,750.00	
Post office.	do.		50	50	2.13	106.50	4 per post office.
Distinguishing—							
Supply train.	do.		24	24	3.01	72.24	2 per supply train per year.
Telegraph.	do.		50	50	2.13	106.50	4 per telegraph station per year.
Veterinary Corps.	do.		50	50	2.35	117.50	4 per veterinary unit per year.
National—							
Garrison.	do.	268	50		63.63		
Post.	do.	77	250	173	18.12		
Storm.	do.	7,939	1,750		5.87	3,134.70	1 per garrison and station per year.
Files:							
Tent—							
Hospital.	do.	3,827	100		31.12		
Storage.	do.	6,914	100		35.72		
Wall—							
Large.	do.	32,048	400		22.28		
Small.	do.	88,944	3,333		14.28		
Goggles.	do.		5,980	5,980	.50	2,990.00	2 per motorcyclist per year.
Guldrans:							
Ambulance, service.	do.	9,564	5,000		2.20		For ambulances and field hospitals.
Ambulance company, service.	do.		100		2.42	242.00	
Ammunition train.	do.		24		2.00	48.00	2 per ammunition train per year.
Cavalry.	do.	1,184	750	24	1.57		2 per Cavalry troop per year.
Engineers.	do.	1,366	200		2.50		2 per Engineer company per year.
Field Artillery Service.	do.	186	500	314	1.92	602.88	2 per battery per year.
Field Hospital company.	do.	15	100	85	2.42	205.70	2 per field hospital company per year.
Motorized machine gun company.	do.		48	48	2.23	107.04	2 per company per year.
Reserve Officers' Training Corps.	do.		100	100	2.35	235.00	Do.
Signal Corps.	do.	128	75		3.26		Do.
Trench mortar battery.	do.		24	24	2.00	48.00	One-tenth per man per year.
Headnets, mosquito.	do.		29,900	29,900	.65	16,445.00	One-eighth per man per year; 7,386 for Reserve Officers' Training Corps.
Housewife.	do.		44,761	44,761	.70	31,332.70	

Instruments band:	47	48	1	
Bases, B.B. flat.....	do	48	1	145.00
French horn.....	do	18	18	1,800.00
Oboes.....	do	48	48	4,800.00
Reeds.....	do	48	48	4,800.00
Stands, music.....	do	1,100	1,100	1,210.00
Tools, band repair.....	do	84	84	840.00
Triangles.....	do	24	24	240.00
Trumpets, F flat.....	do	816	816	816.00
Trumpets, B flat.....	do	816	816	816.00
Trumpets, B flat.....	do	180	73	2,240.00
Repairs, for band instruments.....	do	107		2,190.00
Kits, bag, drumming, Reserve Off- Kits, bag, Training Corps.....	do			28,439.00
Leather:				
Bag.....	Squarefeet	2,500	2,000	7,520.00
Brillie.....	do	254,600		1,125.00
Collar.....	Becks	12,730		157,552.00
Harness.....	Pounds	96,558		210,045.00
Latigo.....	Squarefeet	31,020		63,929.28
				16,130.40

Estimate for clothing, camp and garrison equipage, fiscal year 1921—Continued.

FOR ARMY OF 229,000 MEN.

Article.	Unit.	Estimated stock on hand June 30, 1920.	Maintenance for 229,000 men.	Net requirements.	Unit cost.	Total cost.	Remarks.
Leather, rawhide.	Square feet		\$2,545	82,545	\$0.28	\$712.60	
Lockers, trunk.	Each.		49,833	49,833	7.00	348,831.00	One-sixth per man per year.
Mattresses.	do.		99,667	99,667	7.875	784,875.63	One-third per man per year.
Mirrors, trench.	do.		99,667	99,667	.35	34,883.45	Do.
Miscellaneous articles of equipage.	do.				1.20	598,000.00	
Packing, crating, and handling of clothing and equipage.	do.					500,000.00	
Paulins, large.	Fach.	78	598	520	30.00	15,600.00	One-half per man per year.
Pillows.	do.		149,500	149,500	.90	134,550.00	
Pins, tent.	do.						2 per man per year.
Large.	do.		598,000	598,000	.03	17,940.00	Do.
Small.	do.		598,000	598,000	.02	11,960.00	
Shelter.	do.		1,323,000	1,323,000	.175	231,525.00	3 per man per year; 425,000 for Reserve Officers' Training Corps.
Poles, tent, shelter.	do.	3,181,000	234,500		.19		85,000 for Reserve Officers' Training Corps.
Box.	do.		1,794,000		10	179,400.00	6 per man per year.
Ponches, music.	Each.		20,500	20,500	1.30	26,650.00	15,500 for Reserve Officers' Training Corps.
Razors.	do.		99,667	99,667	1.50	149,500.50	One-third per man per year.
Screens, latrine.	do.	3,592	500		18.75		
Sheets, bed.	do.		598,000	598,000	1.35	807,300.00	2 per man per year.
Skins, chamois.	do.		25,000	25,000	.23	5,750.00	
Slings, color.	do.		25,900	25,900	8.00	7,200.00	600 for Reserve Officers' Training Corps.
Standards.	do.						1 per regiment. New design.
Field Artillery, regimental, silk.	do.		21	21	103.90	2,181.90	
National—	do.						
Service.	do.		188	188	6.20	1,167.60	35 for Reserve Officers' Training Corps.
Silk.	do.		35	35	16.99	595.65	
Signal Corps battalion, silk.	do.		18	18	113.06	2,035.08	1 per battalion. New design.
Stands, music.	do.		6,600	6,600	1.10	7,260.00	5,800 for Reserve Officers' Training Corps.
Stretchers, shoe.	do.		4,900	4,900	.90	2,940.00	1 per company per year; 2,400 for Reserve Officers' Training Corps.
Tent:	do.						
Hospital.	do.	1,570	100		92.18		
Pyramidal, large.	do.	6,620	8,543		125.00		
Shelter, half.	do.	713,099	234,809	1,922	2.62	240,360.00	85,000 for Reserve Officers' Training Corps.
Storage.	do.	10,631	100		134.11		
Wall, large.	do.	2,862	200		80.08		
Wall, small.	do.	27,661	1,667		43.71		
Ward.	do.		179	179	227.19	40,687.01	6 per 10,000 men per year.
Towels.	do.	7,865,148	598,000		.20		2 per man per year.
Whistle and chain.	do.		33,000	33,000	.38	12,540.00	3,000 for Reserve Officers' Training Corps.

1 Per man per year.

Total, \$7,303,180.92.

Estimate for ordnance stores and supplies transferred to Purchase and Storage Service by the Ordnance Department.

Article.	Unit.	Quantity.	Unit cost.	Total cost.	Remarks.
Badges:					
Expert machine gunner, silver.....	Each.....	5,000	\$1.51	\$7,550.00	Based on previous consumptions.
Expert rifleman, silver.....	do.....	25,000	1.25	31,250.00	Do.
Gold.....	do.....	1,000	30.00	30,000.00	For issue to distinguished marksmen and to successful competitors in departmental and national matches.
Sharpshooter, machine gun, silver.....	do.....	10,000	1.25	12,500.00	Based on previous consumptions.
Sharpshooter, silver.....	do.....	100,000	1.10	110,000.00	Do.
Pistol expert, silver.....	do.....	4,000	1.10	4,000.00	Do.
Bagg, musette.....	do.....	20,000	4.00	80,000.00	Submitted in accordance with instructions of Director of Operations. New equipment for officers, Jan. 6, 1920. Copy attached.
Bars, requalification, silver.....	do.....	10,000	.50	5,000.00	Based on previous consumption.
Covers, saddle.....	do.....	40,000	4.00	160,000.00	None on hand.
For experimental purposes.....	do.....			50,000.00	One-half of 1 per cent of value of equipment.
For miscellaneous hardware, material, and supplies for the maintenance of horse equipment of Cavalry and Field Artillery.....	do.....			455,000.00	Do.
For miscellaneous materials, hardware, and supplies for the maintenance of individual equipment of Infantry, Cavalry, and Artillery.....	do.....			455,000.00	Do.
Plus:					
Marksmen's, machine gun, silver.....	Each.....	10,000	.75	7,500.00	Based on previous consumption.
Marksmen's, silver.....	do.....	50,000	.75	37,500.00	Do.
Pistol shot, first class, silver.....	do.....	10,000	.60	6,000.00	Do.
New Cavalry equipment.....	Sets.....	31,675	100.00	3,167,500.00	25 Cavalry regiments, at 1,267 men per regiment, submitted in accordance with instructions from Director of Operations, Sept. 11, 1919. Copy attached.
Sacks, harness.....	Each.....	20,000	6.00	120,000.00	For issue to Artillery organizations.
Tags, for marking personal equipment.....	do.....	2,960,000	.01	29,600.00	10 per man per year.
Total, \$5,143,000.					

Salvaging of clothing and equipage for fiscal year 1921, Army of 299,000 men.

Repairing, cleaning, and renovating.	Unit.	Maintenance of Army of 299,000 men.	Unit cost.	Total cost.	Remarks.
Bags, barrack.	Each.	149,800	\$0.651	\$97,324.50	One-half per man per year.
Paulins.	do.	600	5.00	3,000.00	
Tents:					
Pyramidal.	do.	2,000	8.00	16,000.00	
Shelter, half.	do.	299,000	30	8,970,000.00	
Wall, large.	do.	77	10.39	800.03	1 per man per year.
Wall, small.	do.	1,057	5.57	5,887.49	
Blankets.	do.	698,000	.133	92,834.00	
Breeches:					
Cotton.	Pair.	698,000	.408	284,784.00	
Wool.	do.	698,000	.604	420,592.00	
Coats:					
Cotton.	Each.	698,000	.337	235,226.00	
Denim.	do.	149,500	.10	14,950.00	
Wool.	do.	299,000	.40	119,600.00	1 per man per year.
Drawers, wool and cotton.	Pair.	897,000	.206	184,782.00	
Hats.	Each.	698,000	.24	167,520.00	
Leggings.	Pair.	299,000	.15	44,850.00	Do.
Overcoats.	Each.	149,500	.996	148,902.00	
Raincoats.	do.	149,500	.96	143,520.00	
Sacks, bed or covers, mattress.	do.	299,000	.442	132,158.00	Do.
Shirts, wool or cotton.	do.	897,000	.45	403,650.00	
Shoes.	Pair.	897,000	1.394	1,250,580.00	Do.
Socks, wool.	do.	299,000	.05	14,950.00	
Sweaters.	Each.	44,500	.722	32,331.70	
Trousers, denim.	Pair.	149,500	.10	14,950.00	
Undershirts, wool or cotton.	Each.	698,000	.157	109,586.00	
For cleaning, repairing, and renovating other articles of clothing and equipage.	Per man, \$1.	299,000	1.00	299,000.00	
Total for salvage.				\$4,069,382.32	
Total for clothing.				\$0,418,217.06	
Total for equipage.				7,263,165.22	
Total for salvage.				4,069,382.32	
Grand total.				\$1,690,730.00	
Total required for ordnance stores and supplies transferred to the Purchase and Storage Service by the Ordnance Department, as shown by attached list.				5,143,000.00	
Total for clothing, equipage, salvage, and ordnance stores.				\$6,833,730.00	
Estimate for salvage is based on estimate submitted last year, which has proved to be a correct estimate. In addition to cleaning, repairing, and salvaging the clothing of the men in the service, there are large quantities of clothing on hand which has to be repaired, cleaned, and salvaged, with a view of it being sold or released.					

The CHAIRMAN. You have a considerable quantity of cloth still on hand, have you not?

Maj. HANNAY. We have, and we are asking for nothing for cloth.

The CHAIRMAN. I understand, and you are going to dispose of a considerable quantity of surplus?

Maj. HANNAY. We are disposing of it right along. In this estimate the amount asked for is for deficiencies in sizes, principally, and our estimate is based on the cost of manufacturing the cloth we have on hand into the garments.

The CHAIRMAN. How much of the \$26,982,645 is intended for the manufacture of the cloth you have on hand?

Maj. HANNAY. I can show you that by items.

The CHAIRMAN. Go right through the paragraph and take it up in that way.

Maj. HANNAY. Yes, sir.

The CHAIRMAN. How are you off for overcoats?

Maj. HANNAY. We are manufacturing them now.

The CHAIRMAN. You have plenty of cloth out of which to manufacture them?

Maj. HANNAY. We have plenty of cloth out of which to manufacture them; yes, sir; and we will have to manufacture 100,275 for a strength of 175,000 men at \$2 per capita. That is the cost of manufacturing them; for certain findings and labor.

The CHAIRMAN. What is the cost of manufacture for the trousers?

Maj. HANNAY. The cost of manufacture for the trousers is 90 cents.

The CHAIRMAN. And for the blouse?

Maj. HANNAY. That is \$1.39. That includes, of course, certain findings that we do not furnish.

The CHAIRMAN. Which the manufacturer furnishes?

Maj. HANNAY. Which he furnishes; certain padding, and things of that sort. We do part of these manufactures ourselves. We maintain two manufacturing plants, one at Jeffersonville, Ind., and one at Philadelphia.

The CHAIRMAN. Congress, if you recall, passed a law which allowed an Army officer to secure his clothing from the Government, just as privates secure their clothing; with this difference, however, that the officer paid for those he secured from the Quartermaster General's Department. How is he charged for those uniforms; on the same principle that you sell commissary supplies?

Maj. HANNAY. Exactly.

The CHAIRMAN. You charge nothing for the transportation of the cloth?

Maj. HANNAY. No, sir. We charge him for the total cost of manufacture. Most of those uniforms are being made to order, and cost of manufacture is being charged to the officers. We are making some of those here in the sales store, and the officer in Washington buys them and he pays for all the cost, including all the labor in connection with it. In such cases there would be no other cost accruing to the Government.

The CHAIRMAN. But he would secure the cloth which the Government has on hand, or rather his tailor or the Government tailor would secure the cloth the Government has on hand and charge him the price of that cloth?

Maj. HANNAY. No, sir. That cloth is special cloth, and it is being purchased for delivery here, so the Government is not paying any part of it.

Mr. McKENZIE. Major, I would like to ask you in connection with the manufacture of this clothing what the difference is in the cost of Government manufacture—you have stated you made some of it yourselves—and the cost paid to manufacturers outside?

Maj. HANNAY. I can only state from general experience in clothing manufacture that in quantity production in a big firm the cost of manufacture of civilian clothing should not be over 25 per cent more than we are paying on these bids. That is involved in the fact that in quantity production in a big firm like Kirschbaum, in Philadelphia, instead of cutting, as we do, for instance, 90 coats at once in blocks, they would not do that because practically every layer must be of different cloth—that is, they must get a whole suit out of the same piece. That is to say, the breeches may come out of one piece of cloth and the coat out of another. But with us there is only one type of cloth. There may be a slight variation in shade, but that we can not help. I think from our own experience the additional cost should not be more than 25 per cent for civilian clothing manufacture.

Mr. HULL. You mean 25 per cent more than when you manufactured yourselves?

Maj. HANNAY. For manufacturing civilian clothing, and I believe we could manufacture civilian clothing for 25 per cent more than these costs of manufacture. This, of course, does not cover the cloth.

Mr. HULL. As I understood Mr. McKenzie's question—and it was quite an interesting one—it was how does the cost of manufacture, when you do the manufacturing yourselves, compare with the cost when you make contracts to have it done by somebody else?

Maj. HANNAY. We make these two depots compete, in a way, and if they manufacture cheaper we make the award to them, but we do not attempt to handle all the work there. But that is a way of developing new patterns, keeping down the cost of manufacture to the Government through cost production knowledge gained from our own plants, and seeing that the most economical lay in cloth is effected. When we first established the Philadelphia clothing factory we cut down the cost of manufacture on a coat from about \$1.75 to 69 cents.

Mr. McKENZIE. Right in that direction, I want to ask you about an old matter that has been discussed quite often before this committee, and that is in regard to the wastage of this cloth when you have outside manufacturers make up the suits. Do they turn back to you the waste that results from the cutting?

Maj. HANNAY. I will explain the whole system to you. We work out very carefully from our own cutting plants at our arsenals the minimum amount of cloth per garment necessary in every size, and we take into consideration not only the size, but the widths of each piece of cloth put into the lot. Then we turn over the cloth to the manufacturer in quantity to cut according to our tables, and we require him to get the garments out of that yardage which we furnish him, and we require him to turn back to the Government the fallings of cloth, and we have already estimated through our own experience what that should be, and thereby we get back all the cloth, which

we sell as rags, and the proceeds from those sales go into miscellaneous receipts of the Treasury.

Mr. MCKENZIE. That amounts to quite an item?

Maj. HANNAY. That amounts to quite an item, and it goes into miscellaneous receipts in the Treasury.

The CHAIRMAN. There is another phase of this cloth item. Of course, for the first time in our history, during the war we attempted to reclaim the uniforms so that they could be reissued to the soldiers after repairs had been made. Do you intend to keep up that practice in peace times?

Maj. HANNAY. No, sir; that has been discontinued for the coming year.

The CHAIRMAN. Why can it not be done with advantage to the Government even in peace times, and will it not make a considerable saving if you do it?

Gen. ROGERS. May I answer that question, Mr. Chairman?

The CHAIRMAN. Certainly.

Gen. ROGERS. The method we are pursuing at the present time is to have a plant at each of the large posts and cantonments to make repairs to the individual soldier's clothing, of all kinds, including shoes. But I do not think it is feasible or in the Government's interest to try to make a soldier wear another soldier's shoes in time of peace. In time of war it is a different proposition, and then it is all right.

The CHAIRMAN. I am told that the soldiers prefer the reissued shoes because they had been broken in.

Gen. ROGERS. That is all right in marching, Mr. Chairman, and the old soldier will prefer second-hand shoes to new ones in marching; but in these times of peace I do not think it is feasible to save the old shoes and make the soldiers wear somebody else's shoes.

The CHAIRMAN. At most of the posts, as I recall, they have shoemakers who make repairs for the soldiers.

Gen. ROGERS. The way it is done now is to have the soldier, as soon as his shoes become worn, take them to the plant, one of which we have established in practically each one of the posts, and they will be tagged with his name and repaired and turned right back to the same soldier, and in that way that repairing is done on all the shoes, and when the repairs are made the soldier has his own shoes back again. It is the same way in the case of clothing. In view of the fact that we have so very much new clothing on hand we are disposing of the reclaimed clothing instead of disposing of the new clothing.

The CHAIRMAN. When Congress passed the law giving to every soldier his outfit, the intention, so far as I was able to discover, was that each soldier should have for the rest of his life the uniform he wore in this World War.

Gen. ROGERS. Yes, sir.

The CHAIRMAN. I understand that they gave him, upon his discharge, a suit of clothing that had been reclaimed and also a brand-new suit; also one pair of the heavy shoes with the hobnails, and one pair of the late fashion shoes, which was an entirely new shoe. Was that practice followed?

Gen. ROGERS. I think it was, so far as the intent of Congress is concerned, and I think the instructions were carefully carried out.

The only trouble was the law was passed after a good many of the soldiers had been discharged. The result is that we have had—I think we still have about 1,000,000 soldiers to whom we have got to furnish uniforms. I think we are about 1,000,000 short at the present time. I think they get one complete uniform and not two.

The CHAIRMAN. Did they not get two at first?

Maj. HANNAY. Not as a general policy. It may have occurred in some cases.

Gen. ROGERS. That is not the order.

Mr. McKENZIE. General, some years ago, when I first came on this committee, and perhaps for some time afterward, the enlisted man was allowed a clothing allowance, and out of that he would clothe himself. That practice, as I understand it, has been abolished, and you issue the clothing to the soldiers, to the enlisted man, as he needs it. Is that still the practice?

Gen. ROGERS. That is the practice at the present time.

The CHAIRMAN. Of course, the other was abolished at the opening of the war?

Gen. ROGERS. Yes, sir.

The CHAIRMAN. If the soldier was able to save anything out of that allowance that money was turned over to him upon his discharge upon that enlistment, and so it was an incentive to the soldier who got the allowance to be as saving as possible with his uniforms and shoes.

Gen. ROGERS. That was the old custom.

Mr. FIELDS. Why would not that be a good practice now, considering the high prices of clothing?

Gen. ROGERS. There are two sides to that, among the officers of the line especially. Some would like to go back to the clothing allowance and others prefer the present system. I think it is something that should be taken up. I do not know whether the General Staff are working on it now or not.

Mr. FIELDS. With regard to the question of the reissue of clothing, you find that while the soldier does not object to wearing his own clothes after they are repaired, he does not like to wear the other fellow's clothes.

Gen. ROGERS. There are some other things that enter into it, especially in reference to shoes.

The CHAIRMAN. Is the Quartermaster General making an investigation of the difference in cost between the two systems, the old system which provided a clothing allowance for the enlisted man upon his discharge, and the system which now prevails of giving them new clothing whenever it is necessary. Would it not be a good plan to look into that?

Gen. ROGERS. There was a great deal of waste during the war, of course, and especially on the other side, and I imagine there was here, too, because officers and enlisted men of the Army are rather inclined to be wasteful anyway, and of course this added to it. But I think we are gradually improving all the time and I think we are trying to prevent waste in every way we can.

Maj. HANNAY. There is one thing in connection with that, and that is that if eventually the man who wears the uniform is entirely clothed and equipped in a Government-owned uniform, you can take

action against a man who is wearing unauthorized the uniform of the United States. Formerly the man paid for his uniform, and so there was no way of checking the unauthorized sale or indiscriminate use in the wearing of the uniform.

The CHAIRMAN. He could dispose of it on the plea that he had bought and paid for it.

Maj. HANNAY. Yes, sir; and that involved a great deal of trouble in the Army; and another theory is, of course, that it is not practical in time of war.

Mr. MCKENZIE. The thing that strikes me is this: How do you regulate it; what sort of a system of regulations do you have that will prevent one enlisted man from wearing out two suits of clothes while the man alongside him is only wearing out one?

Maj. HANNAY. Of course, they have a fixed allowance, and there is nothing at present to prevent that except the inspections of the organization commanders. I think probably the General Staff are working out figures of maintenance which will prevent their abusing it.

The CHAIRMAN. Just as I stated to the Quartermaster General, the General Staff probably would arrive at a theoretical approximation; but would it not be well for the Quartermaster General to follow up the thing practically and see the difference in the cost to the Government of the issue as now practiced, as compared with the cost under the old system?

Maj. HANNAY. Yes, sir. Of course, the figures which we would obtain to-day, without proper supervision, would be wrong.

The CHAIRMAN. I understand the cloth has gone up in price; everything has gone up.

Maj. HANNAY. We can approximate it.

The CHAIRMAN. Exactly so.

Maj. HANNAY. It would require instructions of the General Staff to some post to carry this thing out, which the Quartermaster General can not give.

The CHAIRMAN. We will try to have it done. Now, I wish you would proceed with the items for clothing.

Maj. HANNAY. The first item is for \$41,400 for badges, at a unit price of \$1, covering the cost of the badge. We are constantly replacing those throughout the Army for all wars.

The CHAIRMAN. That is the badge you—

Maj. HANNAY (interposing). It is the medal and the whole thing. It includes an amount for four extra bar ribbons and the medal with the ribbon on it.

The CHAIRMAN. Does this item also refer to the first few words in the paragraph—"for cloth"?

Maj. HANNAY. Of the text?

The CHAIRMAN. Yes. I wanted to know whether you could give us just how many yards you have on hand at the present time?

Maj. HANNAY. We can give you that from the stock records.

(The data referred to is as follows:)

Stock on hand of meltons, shirting, and cotton cloth is as follows:	Yards.
Cloth, olive-drab meltons, for manufacture of coats and breeches	9,752,473
Cloth, olive-drab meltons, for manufacture of overcoats	6,282,594
Cloth, olive-drab cotton, for cotton uniforms	7,041,592
Shirting, flannel, for manufacture of shirts	8,444,777

Maj. HANNAY. The next item is for waist belts. The stock on hand is 168,330, and the maintenance required is 300,550, which, at 23 cents each, makes \$30,409 required for this item.

The CHAIRMAN. How much is that per capita?

Maj. HANNAY. The cost of these is 23 cents each, and this provides one per man, including the reserve officers' training camp—100,000 for them. All these figures include the equipment for the reserve camps.

The next item is for green braid. That is a braid which is being issued to enlisted men who served as commissioned officers during the war. It is to distinguish those enlisted men from the others.

The CHAIRMAN. The reorganization bill provides for the new grade of warrant officer. If that bill becomes a law, will you still need that green braid?

Maj. HANNAY. We will, because a majority of these men would not be placed in the limited warrant grade, nor would they be able to pass the examination for a commission.

The CHAIRMAN. Not even for a commission as warrant officer?

Maj. HANNAY. Not even for a commission as warrant officer, and there would not be enough vacancies for them. The amount for this item is only \$600.

The next item is for O. D. woolen breeches. We are asking nothing for cotton, because we have enough of those on hand. But for the woolen breeches we will require \$450,990 to manufacture 500,100 pairs, at 90 cents a pair. That is principally due to the fact that we have absorbed the woolen breeches in the issues to the men leaving the service. For kersey breeches we require 2,006 pairs. We have none of those on hand.

Mr. McKENZIE. Is that to keep up the reserve? You do not figure that it will be necessary to issue those during the coming year?

Maj. HANNAY. No, sir. These will be required for maintenance.

The CHAIRMAN. I understand you have cloth on hand, but you have not manufactured it into breeches.

Maj. HANNAY. Exactly.

The CHAIRMAN. And that therefore you will have to have money for the purpose of manufacture?

Maj. HANNAY. Exactly. In these cases we have absorbed the finished articles entirely in the service.

The next item is for service caps. We did not use those during the war and we will have to buy 300,550, including a supply for the reserve officers' training camps. We are asking \$1.35 per cap and we furnish the cloth and the manufacturer furnishes the leather and the sweat band and all the findings.

The CHAIRMAN. The enlisted men, I presume, will go back to wearing the campaign hat?

Maj. HANNAY. No, sir; he is furnished in garrison with this cap.

The CHAIRMAN. So they will wear the soft hat?

Maj. HANNAY. They wear that for field service in maneuvers and encampment and drills involving field exercises. They are issued both. The amount asked for is \$405,742.50.

The next item is for winter caps. We will require 205,150 of those for 175,000 men, at a unit cost of \$1.10. We have the cloth on hand.

The CHAIRMAN. Is that going to be a different cap from the one we have used in the war, where the men were able to pull down the sides over their ears?

Maj. HANNAY. The overseas cap they could not pull down over their ears. The winter cap they can pull down, and it was used in service before the war, but we were not issuing them during the war. At the beginning of the war they had a few on hand, and they issued them to the first troops that were sent out, but they were abandoned during the war, and we now have to issue them again.

The CHAIRMAN. Therefore you have none on hand?

Maj. HANNAY. We have none on hand.

The next item is for chevrons, and we require 901,650 of those, at a unit cost of 28 cents.

Mr. GREENE. Has the order gone into effect to put that back on both arms again?

Maj. HANNAY. We have not received any word on that.

The CHAIRMAN. That estimate is predicated on the number of chevrons required for an enlisted force of 175,000 men?

Maj. HANNAY. Yes, sir; plus a force of 100,000 men in the reserve officers' training camps.

The next item is clothing for warrant officers, mine-planter service. There are 120 of them, at \$200 each, making a total for that item of \$24,000.

The CHAIRMAN. The uniform is a little bit different from the other uniform?

Maj. HANNAY. No, sir; they are prescribed the officers' uniform, the olive-drab officers' uniform. We have to buy the cloth for them, because the officers' uniform is made from a different cloth, and the officers in the Army buy their own cloth for the entire uniform. But it is provided that these men shall get their uniforms, so we have to provide the cloth.

The CHAIRMAN. How many warrant officers are there in the mine-planter service?

Maj. HANNAY. One hundred and twenty.

The next item is for outer civilian clothing for discharged prisoners. We have found that we could not obtain the uniform for the amount provided in the text of the act for 1920.

The CHAIRMAN. We raised the price \$5 on those, I think, in the last appropriation act and made it \$15.

Maj. HANNAY. We are asking for \$25. In one case in particular which I should like to cite to the committee an officer who had to furnish uniforms for discharged prisoners had to pay for the difference out of his own pocket. They could not be bought for \$15.

The CHAIRMAN. I believe myself the Government allowance for that purpose is altogether inadequate; and to send off an unfortunate man who has had to serve a prison term with a suit of clothes that shows at any rate that he has not been prosperous is a crime on the part of the Government to the discharged man who has served for a crime he has committed.

Mr. FIELDS. It should not be done at all.

Maj. HANNAY. In some cases it must also include the overcoat, in the wintertime, so this is the minimum we can equip the man for at present.

The CHAIRMAN. Where will the change come which you propose?

Maj. HANNAY. It will come in the text on page 32, line 12, "For a suit of citizen's outer clothing, to cost not exceeding \$15." We request that that amount be changed from \$15 to \$25.

If it is satisfactory to the committee, Mr. Chairman, I will simply read the main items and put the others in the record.

The CHAIRMAN. Very well; that will be satisfactory.

Maj. HANNAY. We have an item for denim coats, working clothes, for which the amount asked is \$114,209. That is a unit price of only 38 cents.

The CHAIRMAN. That is for mechanics principally?

Maj. HANNAY. Yes, sir. Then we have an item for oilskin coats, for which the amount asked is \$12,639. Those we have to buy outright. Then we have an item for handkerchiefs amounting to \$132,363.

The CHAIRMAN. Those, of course, are lost constantly?

Maj. HANNAY. We have to supply four to each man.

Mr. GREENE. Those are O. D.?

Maj. HANNAY. Cotton O. D.

The CHAIRMAN. You supply only four to each man?

Maj. HANNAY. That is maintenance; that is what we figure it costs for maintenance.

The CHAIRMAN. How many have you on hand?

Maj. HANNAY. We have none on hand. We furnished none during the war.

The CHAIRMAN. Those were furnished by the Red Cross and various other welfare organizations which had their little cottages at the cantonments?

Maj. HANNAY. Yes, sir.

The next item is for leggings, spiral puttees, woolen. We have none of those on hand. This is a considerable item. These cost \$2.20 a pair, and the amount asked for for this item is \$915,057. There are a number of small items for ornaments.

For the item for woolen O. D. overcoats we require a total of 100,225, including those for the reserve officers' training camps at \$2 per man, which is the cost of manufacturing the fabrics we have on hand. The amount asked for that item is \$200,550.

Mr. McKENZIE. Will you furnish overcoats to the reserve officers in training camps?

Maj. HANNAY. No, sir. This is only half of the regular force. Our figures are based on a conservative estimate, because half of them will be in the Philippines, Panama, Hawaii, or somewhere else where they will not have to be replaced.

The CHAIRMAN. The training period for the Reserve Officers' Training Corps is in the summer?

Maj. HANNAY. Yes, sir. We are only asking for 100,275. That is about half of the total strength on which we are figuring.

The next item is for raincoats, foot, at \$6.75 per coat. We will require 141,000 of those. That will amount to \$951,790.

The CHAIRMAN. Have you any of those on hand?

Maj. HANNAY. We have none on hand. I would like to inject in there this statement, that when I say we have none on hand it means that we will have none on hand on the 30th of June. Each man discharged from war service received a raincoat.

Then there is an item for O. D. cotton shirts. We will require 200,550 of those, at a unit price of 35 cents, making a total cost of \$70,192.

The CHAIRMAN. Have you none of those on hand, left over from the war?

Maj. HANNAY. No, sir. We did not issue those during the war. That shirt is only issued in hot places.

Then there is an item for garrison shoes, of which we will require 725,250 pairs, at a unit cost of \$7.50, making a total cost of \$5,439,375.

The CHAIRMAN. How many shoes are included in a soldier's allowance for a year?

Maj. HANNAY. Three pairs.

The CHAIRMAN. How much are you paying for a pair now?

Maj. HANNAY. This price of \$7.50 is the maximum we have been paying lately. From the best estimates we can make, we will not get them any cheaper during the ensuing year.

The CHAIRMAN. I saw a newspaper article a few days ago which said that the prices will be reduced.

Maj. HANNAY. Every bid we have is higher each time we advertise for shoes.

Mr. GREENE. Do we issue the hobnail field shoe in peace times, or have them in reserve?

Maj. HANNAY. We are not buying those. We have them in stock, but we do not issue them for that purpose. The troops can not wear them in barracks because they would tear the floors all to pieces.

Mr. GREENE. Does this field shoe constitute one of those three pairs?

Maj. HANNAY. No, sir.

Mr. GREENE. That is extra equipment?

Maj. HANNAY. They are now in his war set only.

The CHAIRMAN. I understand we have a very large supply of the hobnail shoes that have been declared surplus and it is hard to get bids on them.

Maj. HANNAY. Yes, sir; we have a large number of them.

The CHAIRMAN. So you do not contemplate the purchase of any of those?

Maj. HANNAY. None whatever.

Mr. GREENE. What did you mean by the phrase "war set" which you used awhile ago? Is that some equipment for the soldier which is laid out alongside of him?

Maj. HANNAY. It is equipment held ready for use when he takes the field.

Mr. GREENE. Is it issued to him and is he held accountable for it?

Maj. HANNAY. It is issued to him as a part of his field-service kit, and he is held accountable for it.

Mr. McKENZIE. Is it proposed to make appropriations in this bill to provide for those reserve outfits for the entire 175,000 men?

Maj. HANNAY. No expenditures under this estimate; it is simply utilizing the stocks on hand.

There is also an item for gymnasium shoes, one pair of gymnasium shoes for each man, which he uses for athletics. We ask for 200,550 pairs of those at \$3.50 a pair, making a total amount of \$701,925. There is also an item for cotton stockings, amounting to

\$245,092. There are four pairs of those for each man which we figure for maintenance. We have 189,243 pairs on hand, and we require 1,303,300.

The CHAIRMAN. At the outbreak of the European war the newspapers carried an item that went around the country to the effect that the soldiers were all wearing woolen stockings and that there was no issue of cotton stockings in the armies of Europe, even in peace times. Was that ever investigated?

Maj. HANNAY. I can not say in regard to the armies of Europe. We did not issue them during the war.

The CHAIRMAN. I know you did not issue them during the war.

Maj. HANNAY. We know that the wool sock is the preferable sock for marching purposes, from orthopedic conditions, but there are a great many men, especially those men serving in the Tropics who have sweaty feet when they wear wool socks for garrison duty, and we are asking for no light wool or heavy wool socks. We have plenty of them on hand.

The CHAIRMAN. Could you give us an idea of just how many you have on hand?

Maj. HANNAY. We have 7,522,000 of the heavy wool socks and 11,127,000 of the light wool socks.

The CHAIRMAN. It is not probable that you will need to buy any of those for a year or two?

Maj. HANNAY. Unless there is some emergency we will not need to buy any for several years.

There is also an item for 40,110 pairs of suspenders. They are authorized for issue to each man, but we figure that not many men will wear them, so we only ask for 40,110 pairs at 35 cents a pair. Then there is also an item for O. D. sweaters. They are authorized. and we also estimate that we will not have to issue them to all the men, so we are only estimating for 63,450, at \$5.95 each, making the total amount for that item \$376,982. There is also an item for working denim trousers, of which we are asking 200,550 pairs at 38 cents. covering the cost of manufacturing the Government material. That amount is \$76,209.

We are asking for an item, Mr. Chairman, of miscellaneous articles, such as clothing necessary to balance the stock in sizes. However, we are not specifying under these items for any of the things we have on hand. We are not certain they are in the right sizes, and the experience of this year has shown that especially due to the fact that there are so many small men coming into the service, that despite the fact that we have 1,950,684 cotton coats on hand, and 3,541,676 pairs of cotton breeches, we are at present manufacturing them to fill in sizes. We have had to manufacture 100,000 to fill in sizes for this summer. and from that experience we have asked, for the purpose of filling in sizes and for miscellaneous clothing, \$5 per man, \$1,502,750. That is derived from our present experience, because in the case of some things for which we did not ask the committee for any money this year we found we had to purchase them on account of the sizes.

Mr. GREENE. Is there anything left of the old blue?

Maj. HANNAY. No, sir. It is not an article of issue.

Mr. GREENE. I know that. Of course, it is not necessarily never to be issued again. But you have nothing in storage now?

Maj. HANNAY. I do not believe there are any of them in storage.

Gen. ROGERS. We had authority from the General Staff to sell them.

The CHAIRMAN. I saw some newspaper articles not long ago that indicated that an effort was made to revive the blue uniform and that the General Staff had decided against it. Is that the fact?

Maj. HANNAY. Yes, sir. I believe it was reported at a conference of the department commanders that they were in favor of officers being authorized to wear the blue uniform.

Now, Mr. Chairman, we come to the items for equipage. Practically all of it is in small quantities. We need 5,000 aprons for blacksmiths and bakers, amounting to \$13,750; water bags for packs for mules, 167, at \$10 each, amounting to \$1,670; water bags, sterilizing, 892, at \$12.75, amounting to \$11,378. That is an important item. You probably noticed it in France. They are put out with sterilized water.

The CHAIRMAN. Have you not a considerable number of those on hand?

Maj. HANNAY. We have only 775.

The CHAIRMAN. What is the life of one of those bags?

Maj. HANNAY. I do not believe we have any figures on that, Mr. Chairman, but from practical experience in a division we found that they had to renew the water bags about every two months. When they were folded and then used again they commenced to leak.

There is also an item here for single iron bedsteads, of which we will require 20,055, at \$10 each, which will make the amount of that item \$200,550.

The CHAIRMAN. They are for the use of officers?

Maj. HANNAY. No, sir; for the enlisted men, to make up the complement. Before the war, of course, we had a smaller Army, and these are to make up the complement and provide bedsteads to that amount. Then there is also an item for 200,550 brassards, amounting to \$19,789, the unit price being 13 cents.

The CHAIRMAN. What are the brassards?

Maj. HANNAY. They are worn by different messengers and orderlies. They wear them on the arm.

Then there is also an item of \$38,906 for scrubbing brushes, and also \$14,080 for bugles with slings. Then we have also an item for 20,059 barrack chairs, the cost of which is put down at \$45,123.

Mr. MCKENZIE. There were a great many chairs used in the recreational halls around the various camps. Many of those were owned by the Government, were they not?

Maj. HANNAY. A great many of them. But I think the majority of them were owned by the welfare associations. Then, too, they were folding camp chairs that would go to pieces in a barrack. They would be more expensive than the barrack chair.

Mr. MCKENZIE. Mr. Dent, of this committee, raised a question about a week ago and spoke about some chairs that had been declared surplus at one of the camps in his State, and a certain organization was authorized to buy them and the order of sale was afterwards withdrawn, and the supposition was that the Army was to retain them for use at vocational schools and things of that sort.

Maj. HANNAY. We are figuring nothing in his estimate for vocational training, although they are using our stocks in enormous quantities. We are figuring nothing in this estimate for that purpose.

The CHAIRMAN. You mean the National Vocational Board?

Maj. HANNAY. Vocational training for the Army.

The CHAIRMAN. They are using material which you have and which has been declared surplus?

Maj. HANNAY. No, sir. They are using that which we are holding for maintenance.

Mr. McKENZIE. You are issuing it to them?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. I think a record ought to be made of that, and I think a statement to that effect ought to be made on the floor of the House, showing that while certain sums are expended for the Army and are voted in the Army appropriation bill, nevertheless large quantities of this material are given over to other organizations, who receive that material free of cost, and when the Army has to replace that material the military appropriation bill has to again carry those amounts.

Maj. HANNAY. In this case I am speaking of Army vocational training, and it involves a number of millions of dollars' worth of stock which we have on hand for maintenance, which will be used for training the soldiers in a trade in the Army.

Mr. McKENZIE. Of course, you do not carry sheet music and musical instruments that you could furnish the soldiers who elect to take music as a part of their vocational training?

Maj. HANNAY. No, sir.

The CHAIRMAN. I suppose you furnish the band pieces? You train the men in band music, men who can not play a note when they come into the Army, and you have been doing that for years.

Maj. HANNAY. We have been doing that for years; yes, sir. We only ask for band music and band instruments according to the authorized tables of allowance for the number of bands. For instance, there is a band which has just been organized at one of our supply depots in Chicago for the uplift of the employees, and they asked for music, but we could not give them sheet music.

Mr. McKENZIE. What I had in mind was this: Say a soldier decides to take music or he wants to be a snare drummer, you furnish him the drum?

Maj. HANNAY. They will take it from our stock for vocational training.

Mr. McKENZIE. If he should decide that he wanted to be a slide trombone player you would have to furnish him with the slide trombone?

Maj. HANNAY. Yes, sir.

Mr. GREENE. If he wanted to be a railroad engineer you would set up a train? That is what they do in the case of the radio.

The CHAIRMAN. Suppose he wanted to be a slide trombonist in your band and you furnish him with a slide trombone, at the time he leaves the Army the trombone still belongs to the Government.

Maj. HANNAY. It remains in the organization with which he trained. He gets his training and goes out into the world able to earn a better living than when he enlisted.

Mr. McKENZIE. He passes out and becomes a slide trombone player, say, in a little town in Vermont and plays in the local band.

The CHAIRMAN. He would have to buy his own slide trombone because the Government does not give the trombone to him, but it allows him to use the one owned by the Government while he is learning to play.

Mr. McKENZIE. Having been educated along the line of having things passed out to him, he probably would pass a subscription list around to buy band instruments.

Maj. HANNAY. There is also an item for 50,000 canvass cots, at a unit cost of \$5, making a total amount for that item of \$250,000. There is also an item for mattress covers, costing \$1.30 each. We are asking for 157,080 of those. We have only 43,000 on hand. The total cost of those will be \$204,204.

There is also an item for field desks, 3,300 of those at \$15 each.

There is also an item for experimental purposes, amounting to \$75,000. That covers the waterproofing of clothing, tentage, and the development of cooking apparatus and organizational equipage of all kinds. We are constantly called upon to make those experiments. As the General Staff develops a new thing, they call upon us to make experiments in rain-proofing methods.

There is also an item for flags for Red Cross. We have 942 on hand, and we should have 5,000, at \$2.33; and also 250 national post flags, of which there are 77 on hand. The amount for that item is \$3,134.76.

The CHAIRMAN. Who manufactures those flags?

Maj. HANNAY. We manufacture them at our own depots.

There is also an item for mosquito head nets, which were not issued during the war. They are required especially in Alaska, and we are asking for 20,050 of those, at 55 cents each, or a total of \$11,027 for that item. Then there is also an item for housewives. There are 25,069 of these required, at 70 cents each.

The CHAIRMAN. Did you not issue those during the war?

Maj. HANNAY. Yes, sir.

The CHAIRMAN. Did you not have some of them left over?

Maj. HANNAY. We have none on hand. They were all issued. There is also an item for band instruments for the reserve officers' training camps.

The CHAIRMAN. For the sake of the record, we are asked every time this item comes up what a housewife is. Will you just state to the reporter for the benefit of the record what that is, so we can have an authoritative definition in the hearings?

Maj. HANNAY. It is a small kit containing scissors and needles and thread and things with which a soldier makes his own emergency repairs.

For band instruments for the reserve officers' training camps we are asking for 400 at \$200 each. This is estimated by the reserve officers' training section of the General Staff, and the total amount for the item is \$80,000.

Mr. McKENZIE. Do you buy the instruments which they have in the camps and employ the musicians?

Maj. HANNAY. No, sir; these instruments are for the purpose of training the men to be musicians. They have bands authorized. In connection with the item for band instruments for the Army we

have several small items for maintenance. One of the largest items for that purpose is for 46 oboes at \$85 each, amounting to \$4,080. Another large item is for music stands. We will require 6,600 of those, and the cost will be \$7,260. There is also an item for band-instrument repairs amounting to \$28,439. There is also an item for bridle leather amounting to \$157,852, providing for 254,600 square feet at 62 cents.

The CHAIRMAN. Are you buying them by contract now?

Maj. HANNAY. No, sir.

The CHAIRMAN. They are being made?

Maj. HANNAY. We are manufacturing them.

The CHAIRMAN. The Ordnance Department used to do that?

Maj. HANNAY. Yes, sir. Those activities have been transferred to the Quartermaster General's Department.

The CHAIRMAN. In regard to the repair of musical instruments, I understand if one of those big instruments is dented you have to send it across the country to be repaired.

Maj. HANNAY. If it is a bad repair. Sometimes the soldier makes the minor repairs himself, or the tinsmith in the post. But anything that is in the nature of a major repair has to be sent back to the factory.

Mr. McKENZIE. Have you not got an enormous surplus of leather on hand?

Maj. HANNAY. The leather we had was turned over for sale to prevent deterioration, and they realized a very high price on it.

The CHAIRMAN. But they will also have to pay a very high price when they get new leather for the bridles.

Maj. HANNAY. Yes, sir; but there was an insistent demand to get some leather on the market. We had practically the whole market control in these stocks.

Mr. McKENZIE. Have you a shortage of bridles?

Maj. HANNAY. This is to cover repair of equipment. We will need this amount to provide for repairs of equipment next year.

Mr. GREENE. In your statement which you are going to put into the hearings are all the leather items brought together?

Maj. HANNAY. The whole thing will be here. There are only six leather items, and they will all be in the hearing, except any such items as the Transportation Service may have for animals on transportation. We provide all harness and saddles in connection with Cavalry and Artillery and Engineers, but we do not provide the leather harness for purely transportation purposes.

Mr. GREENE. I call attention to that because it indicates another place where eventually the Army appropriation bill will have to be brought into something like modern bookkeeping. The items covering the needs of the different arms or services are scattered through the bill and there is no one place, for instance, where you can find out what the total harness expense of the Army is. You have got to pick it out and then probably read by construction some item you have omitted.

Maj. HANNAY. I think if the transportation service comes back to the Quartermaster Corps eventually that could be very easily arranged. As long as they are a separate organization they have to expend a separate appropriation.

There is also an item for trunk lockers, and 66,852 of those will be required. We did not supply those during the war, and they are supplied to each man. The unit cost is \$7, and the total amount asked for the item is \$467,964.

The CHAIRMAN. You had a little trunk you did supply during the war to officers?

Maj. HANNAY. We sold them to officers. The officers paid for them.

There is also an item for 66,850 mattresses at a unit cost of \$7,875, so that the total amount for that item is \$526,448.

The CHAIRMAN. Is that only the ticking for the mattress?

Maj. HANNAY. That is for the whole thing. This is for maintenance and upkeep in barracks and quarters.

The CHAIRMAN. If I recall, there was an item for straw for mattresses.

Maj. HANNAY. That is for field service, where they are issued 30 pounds per month per man.

The CHAIRMAN. I believe something was said about stuffing the mattress.

Maj. HANNAY. During maneuvers they are issued bed sacks to keep them off the wet ground.

For miscellaneous articles of equipage we figure a unit price of \$1 for the total force, making the amount of the item \$300,550. That covers the small articles that are purchased, which, in detail, would take up too much space.

The CHAIRMAN. You might insert a statement about those in the record and say that among these things are so and so. You can indicate what they are.

(The statement referred to is as follows:)

Miscellaneous articles of equipage included under this item:

- Buckets, canvas.
- Cases, color and distinguishing flag.
- Cases, flag, automobile, and ambulance.
- Cases, drum, field, snare.
- Cases, standards.
- Cases, guidon.
- Cords and tassels.
- Covers, cot, canvas.
- Flies, tent.
- Palm, sailmakers.
- Penants.
- Pins, tent, large.
- Rings, national, color, or standard.
- Slings, drum.
- Staffs for guidons and distinguishing flags.
- Tapes, foot, measuring.
- Tent parts.

Maj. HANNAY. Yes, sir. Then there is an item for packing, crating, and handling of clothing and equipage, \$500,000. That is for packing at depots throughout the country, for clothing, and equipage.

Then there is also an item for paulins. We want 1,016 of those at a unit cost of \$30, making the amount of the item \$30,480.

The CHAIRMAN. You did not have enough of those to cover the material as it was being delivered during the war.

Maj. HANNAY. No, sir.

The CHAIRMAN. Therefore those materials were exposed to the elements?

Maj. HANNAY. Yes, sir. We just had a report from New Orleans saying that they did not have enough there to cover supplies.

Mr. GREENE. Do those paulins come in standard sizes?

Maj. HANNAY. They are in different sizes, Mr. Greene. We use practically one standard size. They are made of very heavy duck and the dimensions are 30 feet by 30 feet. I think it is 22-ounce duck.

Mr. GREENE. You say they are of varying sizes so as to be adaptable to special uses. For instance, in transporting Artillery material you probably would have a certain size to accommodate the material.

Maj. HANNAY. Yes, sir. We issue one size for covering stores.

Mr. McKENZIE. Did you not have a very large number of those on hand during the war for covering supplies at the various storage depots, and especially at Camp Holabird, where they have so many automobiles?

Maj. HANNAY. I think the greatest trouble was that they did not have enough to cover and care for the supplies they had. They wear out very quickly.

There is also an item for shelter-tent pins, and we will require 1,929,125 of those. They are of aluminum, and they cost $17\frac{1}{2}$ cents. The amount for that item is \$337,596.

Mr. GREENE. I thought the aluminum shelter-tent pin was under a cloud for awhile.

Maj. HANNAY. It is the present adopted pin in the equipment.

Mr. GREENE. I remember there was some talk about it not being serviceable.

Maj. HANNAY. It is being used now. There is also an item for shoe polish, amounting to \$240,660; an item for bed sheets, amounting to \$541,485. Then there is an item for pyramidal tents. We have 6,620 of those on hand and we should have 7,143 for this force. The unit price is \$125, and it will require an appropriation of \$65,375 for the balance to make up the stock required.

Mr. McKENZIE. You are selling some tents, are you not?

Maj. HANNAY. They are selling the wall tent. We are not asking for anything for those. But we have not a sufficient number of the pyramidal tents. We have an ample stock of shelter tents on hand, so we are asking for nothing for those. It is highly desirable that we have the full amount of tentage, because we are constantly called on for tentage for emergency purposes, especially in the case of floods.

Mr. McKENZIE. I am making no criticism of that.

Maj. HANNAY. We have included in the total which I gave you for clothing and equipage—there are certain items which I will name which total in value \$5,143,000, and these are to cover personal and horse equipment, articles which were formerly manufactured or purchased by the Ordnance Department out of the appropriation for ordnance stores and supplies and which are now purchased by the Division of Purchase and Storage. They have ceased to be ordnance supplies.

Those supplies include—

Personal, individual, and horse equipment:

- Badges, expert machine gunner, silver.
- Badges, expert rifleman's, silver.
- Badges, gold.
- Badges, sharpshooter, machine gun, silver.
- Badges, sharpshooter, silver.
- Badges, pistol expert, silver.
- Bags, musette.
- Bars, requalification, silver.
- Covers, saddle.
- For experimental purposes.
- For miscellaneous hardware, material, and supplies for the maintenance of horse equipment of Cavalry and Field Artillery.
- For miscellaneous materials, hardware, and supplies for the maintenance of individual equipment of Infantry, Cavalry, and Artillery.
- Pins, marksman's, machine gun, silver.
- Pins, marksman's, silver.
- Pins, pistol shot, first class, silver.
- New Cavalry equipment.
- Sacks, harness.
- Tags, for marking personal equipment.

The CHAIRMAN. Going back for a moment to the badges, some years ago it was believed by the committee that the badge was not considered of so much value as a monetary allowance. Congress then passed a law giving a sharpshooter \$3 a month additional, an expert rifleman \$5 a month, and a marksman \$2 a month. Do you now pay those amounts and issue the medal also?

Maj. HANNAY. We do. During the war they discontinued it.

The CHAIRMAN. But now they not only give those men extra pay but they also issue these medals?

Maj. HANNAY. They do, Mr. Chairman. Personally, I believe, of course, that the promotion of rifle practice is one of the most important things in the Army.

The CHAIRMAN. Quite so.

Maj. HANNAY. It was the good shooting of our Army which was the most important factor in Europe, despite all modern inventions, and I think the great failure was at first to pay too little attention to the rifle by the armies of Europe, who were chasing each other around with hand grenades.

Mr. McKENZIE. It strikes me that both the extra pay and the badge make a good investment for the Government. In the first place, the man who becomes an expert rifleman is an asset to the Government and he gives to the country something for the consideration of the additional pay. So the country is not losing anything on that. The badge, of course, is a gratuity in a sense, given by the Government to the individual as an emblem he may wear showing to the public that he is an expert rifleman or a sharpshooter, and that is a matter of personal gratification to him, and, of course, is worthy of his effort in trying to obtain it; and the extra pay is a matter, I think, which the Government gets some consideration for.

The CHAIRMAN. I have no objection to it; I simply wanted to find out the exact facts in reference to it.

Mr. GREENE. There is a tease in the badge, and the fellow who has not got one and sees the other fellow wearing one may be stimulated to get one himself.

The CHAIRMAN. I think the \$5 a month extra pay is also a tease.

Mr. GREENE. But we know there are a great many men who will do for pride what they will not do for money.

Mr. McKENZIE. There is this about it, that very few people know what it means. I always like to look at them, but during the war there have been so many different kinds of distinguished service medals created, and medals of all kinds, congressional medals and others, that when we see a man coming down the street with all those different kinds of medals on we do not know what they mean and we do not know how he got them, but when we see one of these medals we know that there is an American who knows how to shoot.

Maj. HANNAY. We have an item for experimental purposes in all these items amounting to \$50,000. Then we have an item for miscellaneous hardware material and supplies amounting to \$455,000. We also have an item for the maintenance and equipment in miscellaneous material, hardware supplies, and both of these items are figured on one-half of 1 per cent of the value of the equipment, for upkeep.

The CHAIRMAN. Do you know whether this is true? I am told, that the Porto Rico Regiment of Infantry earns more medals for shooting than any other organization in the Regular Army?

Maj. HANNAY. I do not know in regard to that. There is one thing that should be taken into consideration in connection with the Philippine and Porto Rican troops, and that is that they constantly reenlist, so they keep on shooting. We found in the Philippines that a large proportion of them become expert shots.

There is also an item for new Cavalry equipment amounting to \$3,167,000. That is on a basis of 25 Cavalry regiments.

The CHAIRMAN. Under the reorganization bill we have only provided for 17 regiments of Cavalry, as I recall.

Maj. HANNAY. This is submitted on the present organization of 25 regiments in existence.

Mr. McKENZIE. That is, the national defense act in its provisions calls for 25 regiments of Cavalry.

The CHAIRMAN. But the new Army reorganization bill provides for only 17 regiments.

Maj. HANNAY. There is also an item for harness sacks for artillery organizations.

The CHAIRMAN. What is that?

Maj. HANNAY. Thirty thousand sacks for keeping the harness in, to keep it in good condition.

The CHAIRMAN. We have the harness?

Maj. HANNAY. Yes, sir. Then there is an item for tags for marking the equipment. That completes the items for clothing and equipage.

Mr. McKENZIE. There is one question I want to ask you in reference to quartermaster stores. Do you have stored at the present time at all of the various camps and cantonments of the country quartermaster stores?

Maj. HANNAY. We have them stored in depots, and at posts there are small amounts for maintenance kept on hand.

Mr. McKENZIE. My purpose in asking the question is this: We are thinking, of course, of salvaging the National Guard camps; that is, the Government is thinking about it. This committee has not taken

that matter up yet. I understand you have at all the National Guard camps, in fact all the camps of the country, quartermaster stores in buildings that ought to be salvaged along with the other buildings, but it can not be done advantageously as long as you continue to have those stores kept there. If that is true, would it be possible to concentrate these stores, removing them from the National Guard camps so that the whole camp can be cleaned up and salvaged?

Maj. HANNAY. I do not know of the specific stores you make reference to, but the Quartermaster General is constantly taking out supplies in such places and concentrating them in the supply depots, in the Government-owned storage plants as fast as he can get room for them. He has been making very exact inventories of the stock as a basis for action in regard to sales.

Mr. McKENZIE. Of course, you know there are 16 of the National Guard camps.

Maj. HANNAY. Do you mean the National Army camps?

Mr. McKENZIE. No; the National Guard camps. Of course, some of the National Army camps you have salvaged. The point I am getting at is why should not the Government property be removed from the camps if they are going to be salvaged, so there can be a clean up?

The CHAIRMAN. I think the Government property has been removed from the National Guard camps.

Maj. HANNAY. I will have information about that put in the record.

The CHAIRMAN. Of course, the National Guard camps were tent camps?

Mr. McKENZIE. Not entirely.

The CHAIRMAN. There were some little shacks.

Maj. HANNAY. I feel pretty certain that all the property in all the abandoned encampments has been turned in already.

Mr. GREENE. Before leaving this subject, Mr. Chairman, will you turn to page 31, the bottom of the page, the last line, after the word "discharge," there should be a semicolon. The two phrases are run together there.

Gen. LORD. I would like to call the committee's attention and also the Quartermaster General's attention to the provision on page 32 which has been amended. There has been an amendment recommended that the amount allowed for clothing issued upon release from confinement to each prisoner shall be \$25 instead of \$15. That has been approved by the Secretary of War. The phraseology in the phrase starting on the twelfth line and closing with the word "discharge" on the fifteenth makes a difficult construction, inasmuch as under this provision of the appropriation for clothing, camp, and garrison equipage we can only pay that money to dishonorably discharged soldiers who have had a term of confinement. This phraseology makes it necessary that dishonorably discharged soldiers who do not serve a term of confinement must be paid whatever money they are paid out of incidental expenses, rather than from the appropriation for clothing, camp, and garrison equipage.

I recommend that in line 13, after the word "issued" the words immediately following be eliminated to and including the word "discharged" in line 15, and that there be substituted therefor the

words "to each soldier discharged otherwise than honorably," so that the paragraph when amended will read:

For a suit of citizen's outer clothing, to cost not exceeding \$25, to be issued to each soldier discharged otherwise than honorably.

That would result in allowing us to make the payments for dishonorably discharged soldiers out of this one appropriation.

The CHAIRMAN. I understand they are receiving the money now out of the item for incidental expenses.

Gen. LORD. Yes, sir; in the cases of soldiers who are dishonorably discharged, but have not served a term of confinement.

The CHAIRMAN. How much money is appropriated in incidental expenses for soldiers' discharged without honor?

Maj. HANNAY. There is none here for that.

The CHAIRMAN. That would be for soldiers who had served a term of imprisonment. You can put into the hearing, if you will, how much is paid soldiers who are discharged otherwise than honorably.

Gen. LORD. The amount under "Incidental expenses" has been put in the record by Col. Daly, and the amount under "Clothing, camp and garrison equipage" is submitted by Maj. Hannay. It is a comparatively unimportant amount, so I do not think it will be necessary to change the estimate in either case.

Maj. HANNAY. If the chairman is agreeable, I should like to suggest that this amount be left out in here. A specific amount was placed for the present fiscal year, and we have found this trouble during the year. It may be necessary to put the minimum price for suits of clothes for prisoners as high as \$30. But this difficulty will occur, that if the clothing should increase we could not buy a suit. We might not be able to get a suit for \$25, and we would find that the officer directed to do this would pay it from his own pocket. In the case of the officer in the Atlanta zone, he had to pay some money out of his own pocket.

The next item, Mr. Chairman, is for horses for Cavalry, Artillery, Engineers, and so forth. This estimate is based on the tables of organization of 1919. I would like to invite the committee's attention to the fact that although the estimate is based on 25 cavalry regiments it is only based on 21 artillery regiments, and that the artillery horses cost more money than the cavalry horses, so if the legislation passed by the House is enacted, although you cut down the number of cavalry regiments to 17, you increase the artillery regiments, so the total money necessary for animals will be approximately greater.

Mr. McKENZIE. But quite a number of these artillery regiments will be motor drawn.

Maj. HANNAY. At present, one-third. There is one motorized regiment of 155s, and two horse drawn in a division of 75s.

Mr. McKENZIE. They are experimenting with tractors on the light field artillery, with the possibility of motorizing some of the light artillery.

Maj. HANNAY. That is quite so. They are working now on the question of having two motorized regiments and one horse-drawn regiment in a division, but they have not arrived at a conclusion, and if an emergency arose and they did not have animals they would not be able to haul the guns.

For a strength of 175,000 there will be required to procure 10,293 Cavalry animals, at \$225 a head, without replacements.

The CHAIRMAN. Is this amount on page 35, \$7,988,000, the total amount you are asking for, or have you revised those figures?

Maj. HANNAY. They have been revised.

Col. SCOTT. We have estimates for armies of four different sizes.

Maj. HANNAY. The total for an army of 175,000 is \$2,727,000.

The CHAIRMAN. That is what I wanted. You can put the figures for the other sizes of the Army in the record.

Maj. HANNAY. The amount for an army of 175,000, 200,000, 225,000, and 299,000 men is as follows:

Animal requirements, fiscal year 1921—Horses, Cavalry, Artillery, and Engineers.

1. For an Army of 175,000 men, based on tables of organization, 1919, and national defense act, 1916, of 25 Cavalry regiments, 21 Artillery regiments, 65 Infantry regiments, organized in 7 Infantry divisions and 1 Cavalry division. (NOTE.—If the Cavalry regiments are reduced to 17, they would be transferred to Artillery regiments, which would be increased. This, while reducing the requirements for Cavalry horses, would increase requirements for Artillery horses, and Artillery horses cost \$25 per head more than Cavalry, so there would undoubtedly be a deficiency in this estimate.)

For purchase of 750 remounts, at \$150 each (under agreement with Bureau of Animal Industry)-----	\$112, 500
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For encouragement of breeding (Army appropriation bill, p. 369, Book of Estimates, fiscal year 1921)-----	250, 000
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Horses for Cavalry, Artillery, and Engineers—10,293 for Cavalry, at \$225 per head (the price of Cavalry animals has been determined by purchasing officers throughout all sections of the country, and the minimum price for which suitable animals can be obtained, due to the scarcity of Cavalry, is \$225 each)-----	2, 815, 925
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Expenses incident to purchase of 10,293 Cavalry, at \$4.50 per head, including necessary hire of temporary clerical personnel (expenses incident to purchase are as follows: \$2 for 2 days' feed while waiting shipment and undergoing mallein test; \$1.50 for hire of attendant to care for animals at point of purchase and in shipment; \$1 for hire of temporary clerk for personnel for purchasing board)-----	48, 655
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10 per cent replacement ordinarily required for the Army is omitted, in order to reduce the expenditures to minimum. The omission of replacements can, however, only be made for the next fiscal year, inasmuch as if the Army is recruited to its authorized strength subsequently, it will always be necessary to estimate at least 10 per cent replacement.	
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Total-----	<u>2, 727, 080</u>
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2. For an Army of 200,000 men:

For purchase of 750 remounts, at \$150 each-----	112, 500
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For encouragement of breeding-----	250, 000
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Horses for Cavalry, Artillery, and Engineers—11,991 Cavalry, at \$225-----	2, 697, 975
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Expenses incident to purchase-----	56, 185
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Replacement—10 per cent omitted.	
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Total-----	<u>3, 116, 660</u>
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3. For an Army of 225,000 men:		
For purchase of 750 remounts, at \$150 each.....		\$112,500
For encouragement of breeding.....		250,000
Horses for Cavalry, Artillery, and Engineers—13,688 Cavalry, at \$225 per head.....		3,079,800
Expenses incident to purchase.....		63,940
Replacement—10 per cent omitted.....		
Total.....		3,506,240

Animal requirements for Army of 299,000 men.

[Based on bill H. R. 12775, which calls for 110,000 men, Infantry; 20,000 men, Cavalry; 36,500 men, Artillery; which could be organized into 11 Infantry divisions and 1 Cavalry division.]

Unit.	Cavalry horses.	Artillery horses.	Total animals.
11 Infantry divisions ¹	29,227	14,344	43,571
1 Cavalry division.....	13,635	652	14,287
Transportation service.....	338	384	722
Miscellaneous units, posts and stations in United States and insular pos- sessions.....	7,100	3,870	10,970
Total.....	50,300	19,250	69,550
Less stock on hand July 1, 1919.....	37,545	13,428	50,973
Net requirements.....	12,755	5,822	18,577

¹ Two Artillery regiments in each Artillery brigade are horse drawn.

Cost of net requirements:

For purchase of remounts (agreement with Bureau of Animal Industry) 750, at \$150 each.....	\$112,500.00
For encouragement of breeding.....	250,000.00
Horses for Cavalry, Artillery, and Engineers:	
12,755 Cavalry, at \$225 per head.....	2,869,875.00
5,822 Artillery, at \$250 per head.....	1,455,500.00
Expenses incident to purchase of 750 remounts, 12,755 Cav- alry horses and 5,822 Artillery horses, at \$4.50 per head.....	86,971.50
Replacement—10 per cent omitted.....	
Total.....	4,774,846.50

This item provides for \$112,500 for the purchase of remounts, and \$250,000 for the encouragement of breeding. I will ask Col. Scott to explain that. He is familiar with the directions of the Secretary of War in regard to it.

Mr. McKENZIE. What was the amount last year?

Col. SCOTT. That is for the purchase of remounts. The Army has an agreement with the Bureau of Animal Industry of the Agricultural Department by which they purchase colts bred by the Bureau of Animal Industry for \$150. This is the item for the purchase of remounts, \$112,500. The amount last year was \$150,000. We find that the colts are so well bred now that the best ones are sold off, and we only have to estimate for 750 this year instead of 1,000.

The CHAIRMAN. Does the Army furnish the stallions for the brood mares?

Col. SCOTT. The Bureau of Animal Industry of the Agricultural Department has been furnishing them.

The CHAIRMAN. They are Government stallions?

Col. SCOTT. Yes, sir.

Mr. McKENZIE. My recollection of the law is that when a farmer decides that he will have his mare bred to one of these stallions, he enters into a contract with the Government, giving the Government the option and buying the colt at a certain fixed price, and if the Government desires to have the colt they take it and put it at the remount station and keep it there until it is a developed horse.

From your answer it would appear that they were selling some of the best colts to the outside world rather than to the Army. Is that the idea you meant to convey?

Col. SCOTT. The Bureau of Animal Industry handles the options and releases the colts to us. If a farmer raises the colt from a good mare and he could get a thousand dollars for that colt, if you made him sell that to the Government for \$150, he would not stay in that business very long.

Mr. McKENZIE. But he ought to pay for the service of the stallion.

Col. SCOTT. He does. He has the choice of either paying a stud fee of \$25 or selling the colt to the Government for \$150.

Mr. FIELDS. Suppose the colt is an inferior colt; does the Government take it?

Col. SCOTT. No, sir; it does not take it unless it passes inspection.

Mr. GREENE. Does the Government take such colts as it does take from the time of their infancy and bring them along up to the remount station, or are they left sometimes with the farmer until they show enough growth for the Government to determine whether you want them or not?

Col. SCOTT. He is taken at three or four years.

Maj. HANNAY. The next item is for encouragement of breeding, and the amount of that is \$250,000.

Col. SCOTT. This is explained as follows:

During the progress of the war it became increasingly apparent that the general use of the automobile and other factors had so discouraged the breeding of the light type of horse that it became very difficult to secure cavalry horses of suitable type. The use of cavalry during the war, due to unusual conditions, was very restricted. Had this, however, not been the case it would have been extremely difficult, if not impossible, to provide suitable mounts for any large force of Cavalry. The scarcity of riding horses in this country has been frequently reported by many officers connected with the remounts service, and that the situation is becoming more and more alarming is demonstrated by the great difficulty experienced at present by purchasing officers in securing Cavalry horses of proper type and conformation. These reports are confirmed by the following quotation from a report submitted by Gen. T. R. L. Bate, of the British remount service, who was in charge of the British commission in this country charged with the purchase of remounts during the war:

"Experts have known for some time, and our purchasing activities have proved beyond contention, that the Cavalry horse as we know him in England does not exist in North America in any numbers. What have been bought as Cavalry are the best that can be procured, but that is all."

Realizing the growing scarcity of suitable riding animals in the United States for Army purposes, the War Department some time ago created a board, composed of prominent civilian horsemen and officers of the Army, for the purpose of making a study of this important subject and of submitting recommendations for rectifying this condition, if possible. At the first meeting of the board, held in this city on July 24, 1919, it was recommended, among other things, that the War Department take some adequate steps to encourage the breeding of animals suitable for Army use, in order that the supply may not be entirely exhausted. The board, after giving the matter the most careful consideration, recommended that the sum of \$250,000 be appropriated for the encouragement of breeding suitable animals for the Army, under a plan to be evolved at a later

date, and agreeably with this recommendation, which met with the approval of the War Department, an item of \$250,000 was added to the estimate for the fiscal year 1921, under the appropriation "Horses for Cavalry, Artillery, Engineers, etc."

The experience of the War Department in its purchasing operations of public animals has demonstrated that a number of small scrub horses are still being bred in this country, particularly in the West. The type of horse thus produced is a result of poor breeding and of a lack of suitable stallions. The farmer improves the breed of hogs, cattle, and other animals on the farm, but sadly neglects the breeding of horses, principally because it is less remunerative. The type of scrub horse generally being raised is worth little, if anything, commercially, neither is it suitable for Army purposes, although the cost of production to the farmer or breeder is substantially as much as the cost of producing a well-bred animal. The Chief of the Remount Service reports that this type of horse, where it can be sold at all, will bring from \$25 to \$30 each, while a good, well-bred type of riding horse suitable for Cavalry is worth now more than it has been worth at any time in the history of the country. This fact shows that there is still a demand among civilians for a certain number of well-bred riding horses. This animal, therefore, when produced in sufficient quantities should become a commercial factor and bring a good price.

That the breeding of the light well-bred horse has decreased to an alarming degree in a number of horse-producing States in recent years is indicated by the following statistics of the Bureau of Animal Industry, Department of Agriculture, showing the percentage of decrease in the number of light stallions which were used in the stud in the States indicated during the years 1917, 1918, and 1919:

	Per cent.
Michigan.....	50.0
South Dakota.....	70.0
Utah.....	14.3
Wisconsin.....	38.7
California.....	68.6
Illinois.....	53.9
Indiana.....	46.1
Kansas.....	79.1
North Dakota.....	53.8
Oregon.....	30.9

The Chief of the Remount Service, office of the Quartermaster General, Director of Purchase and Storage, in furtherance of the recommendation of the remount board heretofore adverted to, has submitted for subsequent consideration a plan for Army breeding which meets with the approval and has the support of the Bureau of Animal Industry, Department of Agriculture, and also of a number of prominent horsemen and farmers throughout the country.

Applications for stallions have been received from many States, including New York, Pennsylvania, Virginia, Ohio, Kentucky, Texas, Oklahoma, Colorado, Missouri, Iowa, Idaho, and New Mexico. It is thought, therefore, that this plan is not only practicable but would be popular with farmers and breeders, as well as a source of profit to them, and that it would improve the type of horse available for Army purposes in the national defense.

The Bureau of Animal Industry approves of the steps proposed to be taken by the War Department to encourage the breeding of horses suitable for Army use, for the reason that the animals to be raised must be of a military type. Officers of the Army should be in charge or at least in constant touch with all such breeding operations. In addition to this, the stallions during the non-breeding season can be kept much more economically at remount depots where forage is raised and pastures are available. These stallions while at the depots would also be utilized for necessary military work.

Maj. HANNAY. The next item, Mr. Chairman, is for 10,293 Cavalry horses, at \$225 a head, \$2,315,925.

The CHAIRMAN. So practically all the money you are asking for this year is for those Cavalry horses?

Maj. HANNAY. We are asking for 10,293 Cavalry horses. This is predicated on the national-defense act providing for 25 regiments of Cavalry, but the national-defense act only provided for 21 regiments.

of Artillery, and the average cost of the Artillery horses is \$25 more than that of the Cavalry horse; so if the present legislation is passed they will not buy Cavalry horses for 25 regiments, but they will have to have more money than the difference for purchasing extra Artillery horses.

Mr. GREENE. You say the Artillery horse costs \$25 more than the Cavalry horse. How do you get at that average? The Cavalry horse, of course, is essential for mount; but some of the Artillery horses are also for mount.

Maj. HANNAY. They are carried under riding. We issue Cavalry horses and not Artillery horses for mounted men of the Artillery. There are about 500 for riding.

Mr. McKENZIE. During the war there was some very fierce competition among the horse buyers of the country to be designated as Government buyers or assemblers of horses, and at that time they were paid, as I remember, \$20 per head for buying horses and assembling them in their corrals, and then the Government would send its inspectors there and take such horses as the Government inspectors felt came up to the specifications and reject those which did not. Is that system carried on during peace times? Do you pay men \$20 a head for buying horses, or do you have your own men to go out to farms and buy horses?

Col. SCOTT. We have two systems of buying. We pay for the horses; we pay nothing for collecting. We buy, for instance, from a dealer in Chicago or St. Louis or Kansas City and pay him what he asks for the horses. In some places we have officers who buy directly from the farmers. We pay \$15 less in the country than we do where the horses are collected, because if we were to buy three horses at one place we would have to ship them 20 miles and then buy five or six at another place and ship them on; we would have an additional cost on that account. It is estimated that the collection costs the dealer about \$15 a head, and so where they are collected in carload lots we give them \$15 more than in the case where we buy individual horses.

Mr. McKENZIE. That is paid regardless of the value of the individual horse?

Col. SCOTT. Yes, sir.

Mr. McKENZIE. About 20 horses make a carload?

Col. SCOTT. Yes, sir. He would get the maximum price we are allowed to pay—I mean he would get the price he would agree to furnish them for.

Mr. McKENZIE. There was considerable criticism. I can understand why it is an advantage to the Government to have them assembled in large numbers where the Government inspectors can inspect several hundred horses in one place, especially in war times, but in peace times I do not know that there would be so much necessity for that.

Maj. HANNAY. The next item is for expenses incident to purchase. \$48,655.

The CHAIRMAN. What is that for?

Col. SCOTT. That averages about \$4.50 a head. That is allowing \$2 a day for feed while in the hands of the dealer. We have to hold them over in mallein and the dealer feeds them.

The CHAIRMAN. Until you can get them on the train?

Col. SCOTT. Yes, sir. Then we have to hire attendants on the train, and that is put in at a dollar and a half a day. Then that also includes a provision for clerks and messengers, averaging a dollar a head. The general average is \$4.50. That has gone up since last year because everybody is charging more, and that makes a total of \$2,727,080.

The CHAIRMAN. Are you only going to buy mounts out of this appropriation?

Col. SCOTT. That is all we need.

The CHAIRMAN. Can you also put in the hearing the number of kinds of animals you have on hand?

Col. SCOTT. Yes, sir. Horses, cavalry, 38,295; horses, artillery, 13,426.

Mr. GREENE. What kind of prospect have you now for your mounts? I have been told that it is difficult to get suitable cavalry and artillery mounts.

Col. SCOTT. That is what brought out my statement as to necessity for breeding. It is very difficult. They are practically becoming obsolete.

Maj. HANNAY. In answer to your question, Mr. Chairman, if an Army of 200,000 or more is provided there will have to be some artillery horses purchased, but there are enough on hand for 175,000, based on the tables of organization; but if the present pending reorganization bill goes through, of course part of this cavalry money will have to be devoted to the purchase of artillery horses.

Mr. MCKENZIE. You are through with all your items now?

Maj. HANNAY. Yes, sir.

Mr. MCKENZIE. As I remember your testimony you have stated that some of these items in the various appropriations perhaps are under rather than over. For instance, in the matter of forage, you said probably there would be a deficiency.

Maj. HANNAY. Forage and fuel.

Mr. MCKENZIE. Of course there is too large an amount in several of these items if you figure on a basis of 25 regiments of Cavalry. The point is whether or not, averaging up the items you feel that perhaps there will be a deficiency in some of those, whereas there will undoubtedly be a surplus in others, but the total amount asked for in your appropriation, in your judgment, is necessary to cover the whole thing, to take care of a sufficient quantity?

Maj. HANNAY. Absolutely necessary. I believe if we got the total sum it would average a sufficient amount to provide for all the appropriations we ask for. I do not think we would have anything in excess, and I feel sure that forage and coal are going up. We may be able to get along, although if these things go up very much we will not.

Mr. MCKENZIE. If we make a reduction in the appropriation—of course, there are some of these things you must have, but there are others that perhaps you can get along without.

Maj. HANNAY. Yes, sir. There are some of the items that you might eliminate, but if you do eliminate those and any of the items go up you will compel us to create a deficiency.

Mr. MCKENZIE. Of course, we will have to use our best judgment in making the appropriations so that we will not cripple the estab-

ishment. But we are very anxious not to appropriate any sums of money that may be turned back into the Treasury.

Maj. HANNAY. Mr. McKenzie, I want to say that we have, as shown by our comparative per capita cost figures, decreased the per capita cost on all these appropriations below those of the present fiscal year. It has been the Quartermaster General's desire to reduce the estimates to the lowest appropriations that will cover what he can actually foresee, and not ask for a cent which he did not absolutely consider necessary.

The CHAIRMAN. Where do you buy horses for the Quartermaster General—out of what appropriation?

Maj. HANNAY. At present the transportation department buys horses for the Quartermaster's Department, and buy them from their funds.

The CHAIRMAN. We are very much obliged to you.

Gen. LORD. Mr. Chairman, Col. King wishes to present a matter to the committee very briefly in connection with the Field Artillery appropriation on page 5 of the tentative draft of the bill, at the top of page 5.

STATEMENT OF COL. E. P. KING, JR., FIELD ARTILLERY CORPS.

Col. KING. Mr. Chairman, when I was here last week to defend the appropriation on page 5 for \$6,000 for Field Artillery activities, the Office of the Chief of Field Artillery had been informed that an appropriation was being asked for in this bill for the purpose of permitting sending officers of the Army to civilian colleges for taking certain training. We have learned since then that that request had not been included in the bill, and I was authorized to request a modification of the estimate, adding \$1,500 to the \$6,000 provided in the item on page 5, which I defended before the committee last week.

The CHAIRMAN. So you want the amount changed from \$6,000 to \$7,500?

Col. KING. Yes, sir; and we also desire a change in the wording of the item, so that the item will read:

To provide means for the theoretical and practical instruction in Field Artillery activities at the three brigade firing centers at Fort Sill, Okla., Camp Bragg, N. C., and Camp Knox, Ky., by the purchase of modern instruments and material for theoretical and practical instruction, for the tuition of officers detailed as students at civil educational institutions, and for all other necessary expenses, to be allotted in such proportion as may, in the opinion of the Secretary of War, be for the best interests of the service.

This year we have four officers at such institutions. The four officers are at two colleges. One college has remitted the tuition because they have no funds to pay for it, and the two officers at the other college are paying their own tuition fees out of their own pockets for this year. That is a very vital item for any technical service that wants to really improve itself, and so far as the Field Artillery is concerned we intend to use these officers as a nucleus at our schools.

The CHAIRMAN. May I ask the name of the college that charges no tuition fee because of the fact that you have no appropriation?

Col. KING. I understand, sir, that the University of Chicago, charges no tuition fee.

The CHAIRMAN. I think in a case where an institution does that a record should be made of the fact.

We are very much obliged to you.

Gen. LORD. Mr. Chairman, the next subject will be vocational training, which is found on page 42 of the bill.

The amounts approved for the various strengths by the Secretary of War, are as follows: For an army of 299,000, \$10,690,000; for an army of 225,000, \$8,437,500; for an army of 200,000, \$7,500,000; for a strength of 175,000, \$6,562,500.

**STATEMENT OF COL. ROBERT I. REES, WAR PLANS DIVISION,
GENERAL STAFF.**

The CHAIRMAN. Colonel, in regard to the training of these young men, I understand that in the Marine Corps they have been conducting training schools at Quantico, but the instructors are all officers in the service. There are no civilians, I am told, employed for this instruction. Is that possible with the Army?

Col. REES. In accordance with the plan and development of education and vocational training in the Army, sir, I should say most decidedly not. Our plan for vocational training is one which we feel must meet the educational standards of civil educational institutions. We have not in the Army experts for teaching the vocational trades which we are undertaking to offer the men. The plan which we have been working on, developing the policy of, has been this year to have education started and carried on in accordance with the facilities and instruction personnel that was available. Going hand in hand with that, we have been developing educational work for the future to meet the highest possible standards.

The CHAIRMAN. During the war a number of universities were established for the enlisted men, notably at Beaume in France. Was the instruction there done by officers in the Army, or was it done by civilians?

Col. REES. The instruction at the university at Beaume was conducted by civilians, officers, and enlisted men. I might say, sir, that we had a larger field of selection of educators amongst the officers and enlisted men in the drafted Army than we have at the present time. In fact, every member of the faculty at Beaume was a man who had been a professor in an educational institution. We do not have them now in the Army.

Mr. McKENZIE. What was the figure, Gen. Lord, for an Army of 175,000 men?

Gen. LORD. \$6,562,500.

Mr. McKENZIE. Now, Colonel, following the suggestion of Mr. Kahn, the chairman, I want to ask you a question about the policy in respect to this vocational education, as carried on in the Army. What is the argument advanced for giving any other character of vocational training than would tend to make a man useful in the military service? For example, take agriculture. I understand that they are even teaching agriculture or attempting to, is that true?

Col. REES. That is true; yes, sir.

Mr. McKENZIE. Of course, we all understand the importance of that character of education, but I can not understand, nor do I get the philosophy underlying the making of appropriations to the Military Establishment to train men for agricultural work. How do you explain that?

Col. REESE. Mr. Chairman, the basic policy in establishing education in the Army is expressed in General Order 109, as follows:

Education in the Army will serve a twofold purpose:

A. To train technicians and mechanics to meet the Army's needs, and to raise the soldier's general intelligence in order to increase his military efficiency.

That is the primary object of education in the Army.

B. To fit the soldier for a definite occupation upon his return to civil life.

As to that second item, Mr. Chairman, we have in the Army a large part of the young men of the country. When the Government takes the responsibility of the service of these young men, it being possible to improve their condition without great expense to the Government, we feel that we should not only fit them to meet the Army's needs but should in the largest degree possible make them on their discharge better citizens, both socially and economically, so that their time will not be lost when they are in the Army, but that they will leave the Army with a larger earning capacity.

As to restricting their occupations strictly to those which meet the Army's needs, we feel that we should, having the men in the service, give them an opportunity to look forward into their future life's work, and make selection of the trade or occupation which they wish to follow. There are very few occupations which could be given the men in the service that are not of direct application to military necessity within the Army. You have named one which has apparently very little military value, but we found it necessary in France to have a large number of agriculturists in the Army in the large production project that they had over there.

Mr. McKENZIE. You did not need to train any, did you, Colonel, for farm work?

Col. REES. Not during the war; no, sir. We were able to find them.

Mr. McKENZIE. You had some of the best farmer boys I ever knew that went from my home county and district.

Col. REES. I think it would be a mistake, Mr. Chairman, and would unequalize the occupations of the men, if we should encourage them to go into a few set occupations, and I think it would be an injustice to the farmer to take a large number of farmer boys into the service and not make an effort at least to continue their interest in agriculture, and for that reason we want to turn back to civil life as large a proportion of farmers as there seems to be a demand for in civil life. We do not want to upset the skilled labor situation.

Mr. McKENZIE. Now, Colonel, if I may just make a little statement, of course, all these young men going into the Army during peace times go in voluntarily; there is not any compulsion about it. The farmer boy who goes into the Army in peace time goes in to get away from farming, and, therefore, it would be a waste of time to undertake to give him any training along agricultural lines, in my judgment. The only man that you might reach, that you could possibly do something with along that line, would be the city

man who knew nothing about farming, and you might build up in his mind a desire to go to the country and go to a farm. That might be possible.

But, just going back a little further, if there were no activities in the country for training young men, except the Army, I could agree with a good deal of your philosophy; but, after all, the taxpayer is the man who pays for all of this. In every State in the Union we have our agricultural schools, for example, and we have our technical schools, and in nearly every county, and they are paid for and kept up by the taxpayers, with the hope that the young men will come in and there receive an education that will fit them for after life. That is a very proper thing, in my judgment, for the Government to do.

Then we are compelled to maintain a military establishment for the purpose of national defense, that we may utilize in the hour of need. That military establishment, in peace time, of course, has its duties to perform which are manifold and not perhaps anything so very trying, and the officers and men may have some idle time on their hands, but I can not understand why the taxpayers of the country should be called upon to pay money into the Treasury of the United States to be passed over to the Military Establishment, to parallel the identical activities that are carried on in every State in this Union, along the line of vocational education, in our universities, in our schools, and under the Federal Board for Vocational Education, except—and I want to put in this exception—except the training that the officers in the Army might be capable of giving to the enlisted man in those branches of what you might term vocational education, that would make a better soldier out of him in case he were called on to defend our country in time of war.

Now, the philosophy of the whole thing is what I can not understand. I can not understand why we should undertake to make out of the Military Establishment an educational institution paralleling the institutions that we have in every State in the Union and doing the very same identical character of work, and that is why I mentioned agriculture. If you will take a young man in the Army and give him vocational education along lines that will make him a better asset in time of war, such as a mechanician, or a man that can fix an automobile or repair a cannon, or set the sight on a rifle, or do many of those things I can understand that there might be some excuse for us expending some money along that line; but I read a statement last evening, I think it was, that went on to say that the Goodyear tire people were taking their young men and putting them in the Army to go down to Camp Taylor, I believe it was, and there take a year's instruction at the expense of the Government in this military vocational educational training, and then take them back into their plant at the end of a year's enlistment at perhaps better wages than they had before. That is fine for both the young man and the Goodyear Tire Co., but as a matter of public policy connected with the Military Establishment I am frank to say that I can not understand the philosophy of it. Now, if you can go on and make it a little plainer to me I am ready to be informed on this subject.

Col. REES. Mr. Chairman, there is a very fine educational system in our country, which is taken advantage of by those who can afford to go to school. Many boys in the country must give up their edu-

cational advantages and go to work—many poor boys of the country. Their parents can not support them. I would say the great proportion of the recruits that we receive into the Army are boys of that type, that if they could not get the educational advantages in the Army would get none whatever. We must have an Army, we must build up an Army, and if the Army is made up of that character of young men is it not the Government's duty to give that young man every educational advantage that it is possible for us to give him in the time and during the time when we require his services in the defense of his country?

Another point. Mr. Chairman, we must have an Army. There are several ways in which you can maintain an Army. The sure way is by conscription, which we would never think of for a standing Army. The second is high pay, so that we can compete with industry in the payment of labor. That is financially out of the question. The only remaining way is to make the Army an attractive place for the young men of the country by giving them whatever advantage Congress in its wisdom can give them.

Now, I feel, sir, that if we could develop a high-standard educational system in the Army that we would be able to maintain a volunteer Army. The educational features, together with the recreational features which we are undertaking to introduce, would make an institution out of the Army that would be so attractive that we can keep the Army filled up to whatever proportion or whatever strength Congress designates. I feel very, very keenly, sir, that that is one part of the philosophy on which we must build up our standing Army in the future.

Mr. GREENE. Of course, it is a familiar principle of our form of government that the Federal Government is to only exercise such powers as are not, under the terms of the Constitution, reserved to the people or to the States, and we have constantly, up to within a few years, at least, maintained a very steadfast inclination to support and maintain that constitutional foundation of the Federal Government, have we not?

Col. REES. Yes.

Mr. GREENE. Upon the principle that it was a coordinating government of the several independent governments of the States, and that to the people and their States are reserved all the functions of executing the social and economic order that pertained to them in their places of dwelling and in their means of livelihood, and the Federal Government, up to within this recent period, never has exercised that power in any sense, has it?

Col. REES. No, sir.

Mr. GREENE. And it has been a part of our education as Americans to look upon the Federal Government as without its field of labor and operation absolutely when it began to tinker with affairs which, under the terms of the Constitution, are reserved to the people or to the States. And education is one of them.

Now, then, if that was our fundamental policy, and if the Constitution expressly reserved it, not merely as a policy, but as a mandate, it would require some rather definite action on the part of some authorized expression of the law of the land, either constitutional, by amendment, or by the exercise of the powers of Congress within its constitutional jurisdiction, before we could depart from the policy.

Now, it seems to me that, as Mr. McKenzie has distinctly stated, all the forms of popular education, whether for the improvement of the educational status of the individual citizen for his own benefit, or that which is required under authority of the State government as a matter of compulsory education, in order to fit the individual citizen to take a responsible part in the Government under our theory of popular sovereignty, or whether in the exercise of the State's philanthropic mission, if you may call it that, it offers an opportunity for trade and technical schools, these powers have always been reserved to the people and to the States.

How, then, do we find any authority in the power of Congress to upset that great national policy which has continued for 140 years, and begin to divert Federal funds to the supplementing of the province of the people within the States, without express act of Congress under its constitutional authority? I am tacking it right down to what we all admit has been for 140 years the adjudicated status of popular education in this land.

Now, Congress in the national defense act authorized the Army to conduct vocational training for Army purposes and appropriated limited sums of money which were designed to fit the soldier for the service, and for the betterment of his efficiency in the service in matters of vocation which were related to the interests of the service. All at once we turn around to find that the War Department is advertising broadcast throughout Continental America the inducement to young men to come into the Army, not primarily, apparently, for the military service, but that if they will come in they will be given a free trade education, and expressly stating in the literature or other forms of advertising that they can come in and get this free-trade education and go into civil life with the benefit of it. Now, who authorized that, what act of Congress?

Col. REES. I would like to answer your first premise, sir, if I may.

Mr. GREENE. Yes.

Col. REES. In regard to the education of the youth of the country being reserved to the States. We, in taking a man into the Army, definitely and conclusively take him or place him in such a position that he can not avail himself of this educational system which you speak of, sir, therefore as we remove him from that possibility, should we deprive him of any opportunity that we may economically give to him while he is in the service?

I might say that I can not speak concerning the advertising of education in the Army. I have not been in favor of advertising education in the Army personally, but there has been a tremendous and urgent need for recruits in the Army. Congress appropriated last year \$2,000,000 for vocational training, which is the congressional authority for the announcement that we would give education to the soldier, so I believe that it is within the congressional authority, sir.

Mr. GREENE. I think you are quite right, and I ought, in justice to you and to the hearings, say this: My attention has been directed to the fact that in a part of section 27 of the national-defense act (39 Stats., 186) there is this language, among other words:

be given the opportunity to study and to receive instruction upon educational lines of such a character as to increase their military efficiency and enable them to return to civil life better equipped for industrial, commercial, and general business occupations.

Of course, that language, as it stands there, is true, but it would not be true, whether the language was in there or not, if you once permitted vocational training. The point I am getting at is the overemphasis placed on those last words.

It follows, as a matter of pure reasoning, of course, that if you give a young man who has a determinate enlistment in the Army vocational training he will take the benefit of it out of the Army with him when he is discharged. That is not to be avoided under the terms upon which you established the vocational education in the first place. But it appears to be the policy not to hold out to the recruit the inducement to come into the Army and follow a military life, and to receive such benefits of the military life as other men go in to enjoy, as well as to participate in the obligations of service, but to go in merely in order to come out again, and to go in to take advantage of those last words in the law, that getting by reason of his service a certain proficiency in these things, he can go away with it and apply it somewhere else. It is that emphasis upon the secondary effect to which I am directing attention. It seems to me it is a perversion of what I first described as the constitutional mandate and the approved policy of 140 years that the Federal Government did not set itself up as an educational institution.

Is that a matter of policy which seems to enable us to do this advertising to induce the recruit to come into the service only for the benefit of this education? How was that policy determined?

Col. REES. On matters of recruiting policy I can not speak, sir.

Mr. GREENE. I do not want to embarrass you, of course. But I might emphasize this further, that Congress, in passing that act, never contemplated the purposes to which it has been applied. I am just as morally certain of it as I am of anything, because that object, that is enlarging the power of the Federal Government to conduct a Federal school, never entered the minds of the people who proposed it on the floor as one of its purposes, and was not mentioned in the debates, so that the House, when it passed it, was informed that that was to be its main purpose.

Mr. FIELDS. If I may interrupt right there, Mr. Greene, I was one who, having advocated it from the beginning, and having spoken for it on the floor, had that very thing in mind.

Mr. GREENE. That may be.

Mr. FIELDS. And I think a great many others did also.

Mr. McKENZIE. Allow me to interject right here, Mr. Greene, to couple up with what you have stated, that this proposition would not appear quite so glaring, perhaps to some of us, if this training or education were carried out by the officers in the Army, but it has come to our attention here that paralleling the Army is another force of teachers.

Mr. GREENE. I was going right along on that line. However, it is a matter of policy that I realize you are not responsible for, and I do not want to interject into your embarrassment any matters of that delicacy.

But here is a phase that Mr. McKenzie has anticipated me in. As the result of the authority written in those words, or the construction of the authority derived from them, the Army to-day has a host of civilians attached to the Military Establishment for the purposes

of vocational training. How many? Have you the figures convenient?

Col. REES. Seven hundred and thirty-three.

Mr. GREENE. Pretty nearly the strength of a peace-time regiment just before we went into the war. I do not think the people who voted that money had any idea of raising a regiment of school-masters. I do not think it occurred to them at all.

Col. REES. It says distinctly in the law there—

Mr. GREENE. I understand. I am not disputing the text of the law. That would be idle. I am trying to emphasize what it seems to me is a misinterpretation of the policy behind it. We all realize that to write a statute you have got to use commonly accepted words, and anybody that has had any experience here, especially with two such functionaries as the Comptroller of the Treasury and the Supreme Court of the United States, knows that you can never write any law that apparently means what you say. That is not possible. We have all had that experience in mind for a number of years. But that was not meant to mean what it seems to be interpreted to mean, because if it was, then Congress has unwittingly departed from its ancient policy of leaving the matter of popular education, as the Constitution provided, to the people or the States.

Mr. MCKENZIE. I think perhaps that may be explained by the statement you made about a year ago, that as you walk down the street a certain sign will be soap, and as you walk up the street it will read the other way. In other words, the men who went along about this thing perhaps had in mind doing just what they are now doing, but the Members of Congress did not have that conception of it at all. They saw the thing coming down the street, and we saw it coming the other way.

Mr. GREENE. Now, there is another phase of it. You say, then, Colonel, that it is employed as an inducement to recruiting, which is an expedient in that sense; that you find it difficult to encourage young men to come into the Army for the love of the military life of itself, and that now they are to be attracted to it by inaugurating a device that is legitimate and honorable, but that will induce them to come in and be something that they are not, for the purpose of preparing themselves to go out to be something that they want to be. That was not the original foundation purpose of the Army, particularly.

I want to ask this further question: Somewhere there used to be a tradition that there was a corps d'elite and that it was the Regular Army of the United States, and that the men who went into it went in because they were of the temperament and of the capacity most efficiently to serve their country on what in the old days of legend and song was called the field of honor, and that they would risk their own lives to do it, and they would live in an atmosphere that had engendered and preserved and made sacred the instinct of the soldier to do all those things at beck and call, at any hour of the day or night, and to live for no other purpose and with no other ambition. And we had a handsome, noble company of fighting men.

How long can we expect to maintain that atmosphere, if the doors are on swinging hinges, and are just to let the boys go in to come out again, and to go in not for the purpose of being a part of that at-

mosphere, of its traditions, and of its common purpose of sacrifice and service, but simply to learn from the men who have founded such an institution in such a way, with such traditions, how to go out and fatten their own pocketbooks? What will become of the traditions of the Army in a little while?

Col. REES. Mr. Greene, I have been 23 years in the service, and if I did not feel that with this educational work in the Army we were not going to make better soldiers and better fighting men, I would have nothing to do with it, and I would not be here to defend this educational program in the Army.

Mr. GREENE. I hope, Colonel, that you do not take that as a reflection upon your own personal relations in this matter.

Col. REES. Not at all, sir. I simply wanted to state what my experience would tend in every way to show, and I do in every word agree with what you say, sir.

In this new Army of ours, the mechanical organization of which was so completely demonstrated in the war, it has been indicated that we must give the highest type of technical training to our men. Battle training in the modern army requires men of high intelligence. We must raise their general intelligence to the highest degree possible while we have them in the service. Therefore I feel that the highest type of education that we can possibly give the soldier in the Army is distinctly required of him to make him an efficient soldier. I should like to say this also, Mr. Greene. You give us the man in the Army, let him come with whatever incentive—love of the military service, or for some sort of vocational training—and with the spirit in the Army that you have spoken of, we will fill him with that fighting spirit, and with the good traditions that you have spoken of, which have been the backbone of the Army for years.

Mr. GREENE. Now, Colonel, I want to be perfectly clear in the record as to my own attitude toward it, lest my questions would indicate an over skepticism as to any benefits to be derived from the education, or that I repudiate the policy that was instituted or thought to be instituted in the original act.

I can see readily that what you have just said is true, and must be so, and that, contrary to perhaps a very ignorant public opinion, it takes a man of good brains, healthy imagination, and a proper, high standard of ambition, and every capacity for its expression to be the ideal soldier. He is not a brute or a butcher. He ought to be, as near as we can approach to it in this prosaic day, something of the old knight. He should have the same sense of chivalry, and he ought to have the same sentiment. He ought to have all those beautiful faculties that make men live for the principles in which they believe.

I think what we wanted to do in passing that act was to try to improve the service, from its own necessities, in its mechanical trade workers, and so on, and to fill the minds of the soldiers in their idle time or recreational time with other things that might be to their advantage as soldiers and as men. But what I am trying to stress here is that what was adopted as an incident of the Military Establishment, now seems, by some one's policy, to have been diverted from its original purpose.

Col. REES. I do not think it is a fact. It may be in seeming, but not in fact; I will explain to you what we are actually doing, sir.

Mr. GREENE. I do not mean to trespass any further on your time, but I am only going to suggest this, and, as one who is so conspicuously useful in and identified with the military service, it may be something well to bear in mind in the evil days that may come upon us, before long, too. To-day the country is just going through. I should say, the reaction that inevitably follows any such gigantic undertaking as this last war, and we know that people are not perhaps altogether thinking in very specific or definite terms about some things. They are laboring under a sense of irritation, unrest, and discontent, and a restless longing to have some kind of a change which is going to better them. It is hard enough to steer legislative bodies through those waters under any conditions, but this is what you are going to face. Almost a miracle took place when the Army reorganization act went through the House. A little while ago nothing like it could have gone through. We all remember the days of the national defense act, and what labor it was to rig up an act and get it through and have its effects distributed over five years in annual increments of increase. But we have now doubled the commissioned personnel with one stroke of the pen here in a week. It was done with something of an assurance of good faith, and, I believe, upon a very substantial military as well as national policy.

But let us see what the public, which has to audit these accounts as the years go on, is going to say about this. Already, of course, there is something like a more or less fixed practice of estimating the cost of a standing Army on a per capita basis. It is not quite fair to the actual economics of the Army, but until within recent years it at least represented very nearly the cost of the actual expenditure for actual military purposes, and we will say that for an enlisted man it has been variously figured anywhere around \$1,400 a year. It has been shifted to either side of that figure, but it has been in that neighborhood. Now, with the growing tendency of this and several other similar policies to pile millions and millions of dollars upon the Army appropriation bill every year, pretty soon somebody will sit down with a pencil, and will divide the gross total by the strength of 175,000, and say, "Why, here, in 1919 175,000 men would have cost \$1,400 a head, and in five years from that time, in 1924, they are costing \$2,500 a head. What is wrong with the Army? What has increased this thing so extravagantly for military purposes in time of peace that we have jumped from \$1,400 to a per capita of, say, \$2,500? There is something wrong with it. Reduce the Army." That will be the natural popular slogan, "Reduce the Army! It is a monster which is eating up our pocketbooks."

The Army will inform those who are paying the taxes for the support of the Army, "It is not the fighting man, for the purposes of the Military Establishment, who is really eating up \$2,500 a year"—perhaps the figure then for maintenance for strictly military purposes will be back down even below \$1,400—"but, this addition which raises it, we will say, to \$2,500 a year, is distinctly and purely in the War Department, under the announced policy, for preparing men for functions in civil life, and has no relation to the maintenance of the national defense in a military sense at all."

Who is going to stand sponsor for the Army in those days of trouble? Who will defend the figures in the appropriation bill on

the floor, unless something is done now before that tide of reaction sets in? You and I know that there are thousands and thousands of people in this country who would like to put the Army right out of business to-day. What better argument would they have than to appeal to the pocketbooks of the multitude, from soap boxes in the street, unless something is done at least to segregate these expenses, and to announce so that the public will know it, either in law or by a declaration of the administration itself, the part of this money that is being used for the maintenance of the Military Establishment, which is, say, so much, and the other part that is supplementing those functions and activities which hitherto have been reserved to the people or the States for civil purposes only?

Col. REES. Mr. Greene, I consider that this item in the appropriation is a training item, and can be defended purely from the standpoint of the training of the Army, and is a just charge on the per capita cost of the soldier, when you strip away all the many items which are not properly chargeable to the soldier.

I feel that this item in the appropriation bill has as much to do with raising the general efficiency of the Army, and raising the standard of the Army itself in the eyes of the people as any other one item that there is now in the appropriation bill.

Mr. GREENE. Then you are quite willing to let this rest upon this statement of fact, as you understand it, or as you believe it, that as these figures increase from time to time, and some of us will struggle here to get a fair bill for the Army, and are called upon to defend it, you will continue to argue that this civilian training adjunct which is now conducted under the guise of a military establishment appropriation, is a justifiable military expense and should be chargeable to the Army?

Col. REES. I will; yes, sir; but I do not quit like the expression, "civilian organization." I have forgotten exactly your words.

Mr. GREENE. You have a right to except.

Col. REES. I feel that in order to establish educational and vocational training in the Army we must give it so that it will meet the standards that the country will demand. We have not in the Army teachers for vocational training.

Mr. GREENE. Colonel, perhaps I would spare you some words if I would suggest that I agree with you, of course, that the character of vocational training that you should give the soldier ought to be of a high standard. I am speaking only about the basic policy, and whether you are content to let the money that is to be spent for this great, high standard of education, with all its adjuncts, be charged off to the Army as an expense of maintenance of the Military Establishment as a form of the national defense.

Col. REES. Yes, sir; on the ground that it is going to increase the military efficiency of the Army.

Mr. GREENE. I hope, if any of us here remain and have to run the gantlet for you in the future years to come, that you will help us out of the dilemma when we have to face it.

Mr. McKENZIE. Of course, the vocational education such as you carry on in the Army does not involve the higher branches of mathematics or anything of that character that would require a professor or a highly educated man. You would need a teacher who had experience along vocational lines. Now, do you not believe that it

would be possible to confine the teaching to the men in the Army—the officers, commissioned and noncommissioned, and some of the enlisted men? Why could not enlisted men who understand all about a gasoline engine give raw recruits training along that line, and would not that be a great saving, and would it not remove a great deal of criticism if we would write a limitation in the law requiring this teaching to be done by the Army itself?

Col. REES. I think that would be fatal to the success of the educational and vocational system in the Army.

Mr. McKENZIE. Let me suggest this: I assume that in every regiment, and perhaps in every company in the Army to-day, you have men who are familiar with perhaps every character of vocational education that you are engaged in in the Army. Now, why could not those men be detailed to do that work, instead of going outside and hiring civilians to come in and do it? That is what I can not understand. And then, as Mr. Greene suggests, the Army would not be charged up with the overhead of carrying, as you said, at present 733 teachers.

Mr. GREENE. And that does not count the apparatus either.

Mr. McKENZIE. I know. And then the Army would only be charged up with the material that would have to be furnished for the students to work on while taking the training, and it would be a great saving.

Col. REES. Mr. Chairman, may I explain the basis upon which we develop this education?

Mr. McKENZIE. Yes, sir; put in any statement you wish.

Col. REES. In training a man in a given trade, we feel that for military as well as for the purely vocational advantage of the man he should be taught that trade in the very best possible manner. In building up a course for a given trade—and, by the way, we have listed 107 different trades that we are teaching at one place or another throughout the Army to-day—

Mr. McKENZIE. Could not that be brought down to about 17, without injuring the efficiency of the man as a military man? I mean, would not 17 different activities cover about all that he would need as a military man?

Col. REES. Mr. Chairman, I can not remember the figure of the demand for mechanics during the war, but there were something over 300 different kinds of occupational trades that were required; that is, different kinds of technicians.

Mr. McKENZIE. That division was not brought about, based on the rules of the union, was it, for instance, that a man might be a lather, but he would not dare nail on a siding, or if he put on a siding, he would not put on a roof?

Mr. GREENE. That is along the highly-specialized industrialism of to-day, when the old crafts and trades are now refined into many sections, departments, and specialties, to answer a peculiar policy of the industrial world to make a man profitable at piece work. That is a part of the reason for it, because the old lines upon which certain ancient crafts used to operate are well nigh obliterated in some respects by this constant subdivision into specialties, and it is so marked and so pronounced that the industrial world, in its own organization, finds it necessary to prepare these men more or less by trade schools.

over what used to be the practice when the crafts were more elemental and simple. Is the Army undertaking to solve that enormous problem of the industrial world, and one that the very best trained thinkers are now at work on? Is the Army undertaking to solve that too in this classification?

Col. REES. We are going to make a man a thoroughly trained mechanic in any given trade, sir.

Following out a logical answer to your question, sir, in order to teach a trade properly it is necessary to make a careful job analysis of that trade, and divide it up into all the necessary processes through which a man must go and must obtain skill in, in order that he may become a skillful mechanic. Having analyzed the job into all of its numerous processes, it is then necessary to build up as a course for that man a series of jobs which will begin with the simple processes of the trade, and continue, with repetitions, to the more difficult processes.

To do that it is necessary to prepare a number of job sheets which, in their total and in sequence, will drill the man in all of the processes that go to make up a skilled mechanic in that given trade. That is the basis, and by educators is claimed to be the only way in which you can turn out a complete mechanic in a trade in any sort of reasonable time, and by that system of training you can do in six months, or even less, more than can be done by the full apprentice system.

A committee of a labor union visited Fort Monroe, where they have trade schools going, and they were not very favorably disposed toward our mechanical training in the Army until they had thoroughly inspected the work, and the head of a trade union stated to the commanding officer, Gen. Chamberlain, that one year's training at Fort Monroe they would accept as equivalent to three years' training under their apprentice system, and they were very favorably impressed with our system of training, as we are developing it this year in the Army.

Mr. MCKENZIE. Right at this point in your testimony will you kindly put in a list of those 107 different branches of vocational training?

Col. REES. I will.

(The matter referred to is as follows:)

VOCATIONAL TRAINING.

- | | |
|---|--|
| <p>1. Automotive department:</p> <ul style="list-style-type: none"> * Auto and truck repairman. * Tractor repairman. * Motor cycle repairman. * Auto driver. * Truck driver. * Tractor driver * Motor cycle driver. * Storage-battery specialist. * Tire repairer and vulcanizer. * Wheelwright (automotive). <p>2. Electrical department:</p> <ul style="list-style-type: none"> * Radio specialist. * Lineman. * Radio operator. | <p>2. Electrical department—Continued.</p> <ul style="list-style-type: none"> * Telegraph operator. * Telephone operator. * Switchboard operator. * Telephone electrician. * Telegraph electrician. (Power lineman.) (Interior wireman.) (Factory electrician.) <p>3. Building department:</p> <ul style="list-style-type: none"> * Carpenter. * Concrete worker. * Painter. (Structural worker.) (Cabinetmaker.) |
|---|--|

- | | |
|---|--|
| <p>3. Building department—Continued.
(Pattern maker.)
(Stone mason.)
(Brick mason.)</p> <p>4. Textile department:
* Canvas worker.
* Tailor.
Cordage worker.</p> <p>5. Food department:
* Mess sergeant.
* Butcher.
* Baker.
* Meat cutter.
* Cook.</p> <p>6. Animal transportation:
* Horseshoer.
* Stable management.
* Cargador and packmaster.
* Farrier.
* Stable boss.
* Teamster.
* Wagon master.</p> <p>7. Metal department:
* Blacksmith.
* Plumber.
* Pipe fitter.
(Sheet-metal worker.)
Welder.</p> <p>8. Printing department:
Printer.
* Photographer.
Lithographer.</p> <p>9. Medical department:
* Pharmacist.
* Nurse.
* Surgical attendant.
Dental assistant.
X-ray worker.
Biologist.
(Embalmer.)</p> <p>10. Highway construction and topography:
* Surveyor.
* Mapping.
* Topographer.
* Highways and bridges.
* Draftsman, topographic.</p> <p>11. Power department:
Dynamo tender.
Gas-engine worker.</p> | <p>11. Power department—Continued.
Oil-engine worker.
Steam-engine worker.
Refrigeration worker.
Fireman.</p> <p>12. Music department:
* Musicians.</p> <p>13. Leather department:
* Shoemaker.
* Saddler and harness maker.
Leather worker.</p> <p>14. Machine department:
Instrument repairer.
Mechanic, general.
* Mechanic, machine gun.
* Mechanic, gunsmith.
(Machine designer.)
* Draftsman, mechanical.
Freehand sketching (machine).
(Foundrymen.)
(General machinist.)
(Toolmaker.)
(Pattern maker.)</p> <p>15. Miscellaneous department:
* Laundryman.
Moving-picture operator.
* Wheelwright (wagon).</p> <p>16. Business department:
* Clerk, pay-roll.
* Stenographer.
* Storekeeper.
Statistician.
* Typist.
Bookkeeper.
* Clerk, general.
(Clerk, production.)
(Purchasing agent.)
(Business administration.)
(Advertising.)
(Salesmanship.)</p> <p>17. Agriculture:
* Truck gardening.
* Horticulture.
* Agronomy.
* Farm mechanics.
* Farm economics.
* Economic entomology and zoology.
* Animal husbandry.</p> |
|---|--|

EDUCATIONAL TRAINING.

- | | |
|---|--|
| <p>1. * Basic courses:
Penmanship.
English.
Arithmetic.
Spelling.
Geography.
United States history.
Civics.
Elementary science.</p> | <p>2. * Advanced courses:
Mathematics.
General history.
Modern languages.
Economics.
Sciences.</p> |
|---|--|

NOTE.—Courses marked * are considered most essential. Courses in parentheses are those which are considered least essential.

Mr. FIELDS. Going back to the base of the proposition that Mr. Green and Mr. McKenzie discussed, the first thing we have got to have is an Army, the strength of which is estimated at this time at 175,000 men. As the colonel has said, that Army must be secured through one of three methods—by conscription, by paying them a price that will induce them to come in, or by some other method that will induce them to come in. When in the Army their military duty is first, is it not, Colonel?

Col. REES. It is.

Mr. FIELDS. That is their first duty?

Col. REES. Yes.

Mr. FIELDS. And if an emergency should arise during the enlistment of any man or number of men who were taking vocational training, that would not interfere with their military duty, because that is first, as I understand it?

Col. REES. Always.

Mr. FIELDS. That is always first, but it is not necessary that they should devote their entire time to military tactics, is it?

Col. REES. It is not; no, sir.

Mr. FIELDS. In fact, has the Army ever done that—at least, in recent years?

Col. REES. No, sir.

Mr. FIELDS. The next question that comes is, How should they spend their leisure, idle time? and it is your purpose that they shall spend that time in this vocational training, that prepares them not only for service in the Army, but for useful occupation when they go back to their civil pursuits. But is it not a fact that with modern warfare this teaching and training is really military training in a sense?

Col. REES. I think we can very safely say so: yes, sir.

Mr. FIELDS. Is it not a fact that when we entered into this last war mechanics had to be trained after we entered the war?

Col. REES. That is so, sir, and it was my responsibility to get up a system of training to train a part of those mechanics.

Mr. FIELDS. If I recall, the Chief of Ordnance, upon being questioned before this committee as to why he had not enlisted the full strength of his department, said, "We could get the men, but we have not the mechanics that we must have first before we need the men. We are suffering from the want of mechanics and draftsmen." And I understand, in fact I was told, that throughout all the branches of the service where mechanics and draftsmen were needed, there was a shortage of them, and that they had to get boys from the farms and from behind the counters, or anywhere they could get a man that had mechanical ability, and develop that ability before they had the men to perform the service.

So, when you are preparing a man who has to do the mechanical work that must be done in the prosecution of a war, is not that really necessary training as well as being the military tactics that he must observe and follow in battle?

Col. REES. Yes, sir.

Mr. FIELDS. Of course, one might think, from reading the hearings, that the whole cost of this bill was for vocational training in the Army. What per cent of the total estimate proposed in this

bill is for vocational training in the Army? Gen. Lord, I suppose, could answer that question.

Gen. LORD. Approximately $1\frac{1}{2}$ per cent.

Mr. FIELDS. One and one-fourth per cent of the total estimate?

Gen. LORD. Of the total estimate approved by the Secretary of War.

Mr. FIELDS. What is the total amount upon which that percentage is based?

Gen. LORD. It is very roughly drawn. We will not know until we get our final total on it.

Mr. FIELDS. But approximately.

Col. SMITH. About \$500,000,000.

Mr. McKENZIE. I want to interrupt right here and ask Col. Rees or Gen. Lord to put in a statement showing the entire amount of money carried in this bill for vocational training in all of its different phases, the amount for material and instructors, and everything that goes as a legitimate expense to be charged to vocational training. When you put that in the hearing, then we will have something.

Gen. LORD. I think Col. Rees has that with him. I submitted to him your question, thinking possibly you might like to have it here to-day.

Mr. McKENZIE. In nearly every item that we have had up in this bill there was something about vocational training, about furnishing something for them to work on, and so on.

Gen. LORD. I reported your request to Col. Rees and asked him to provide that data, and he is prepared to submit it to-day.

(The matter referred to is as follows:)

[NOTE.—The total appropriation asked for vocational training for the fiscal year 1921 for 299,000 men is \$10,600,000. Beyond this sum the Army will require nothing during the next fiscal year for vocational training if the plans now made are carried out. About \$30,000,000 worth of supplies have been reserved for vocational training from the surplus war material of the Army and are now made available for that purpose. These supplies and the funds here asked for will enable the Army to carry on vocational training successfully and with satisfaction to the country.]

Mr. FIELDS. Now, Colonel, what per cent of the time of the soldier in peace time is devoted to strictly military duties?

Col. REES. That is a difficult question to answer, sir, because there is so much variation, but it does not average, I think I am safe in saying, more than three a day during the whole year.

Mr. FIELDS. About how many hours a day do they serve—about an 8-hour day, a 10-hour day, or a 12-hour day?

Col. REES. I should like to say that in our apportionment of time for military training and vocational training we have allotted five-eighths for military training and three-eighths for vocational training on an eight-hour day.

Mr. FIELDS. Five-eighths and three-eighths?

Col. REES. Yes. I would like to give you a little more definite statement as to what the annual program will be under the system of vocational training. We propose in what you might call the school year to have 720 hours devoted to vocational training. That, on a basis of four and one-half hours a day for eight months, would make it possible to give all of the vocational and educational train-

ing from 12.30 to 5 in the afternoon, leaving during that eight months the morning free for military training and leaving the four seasonable months of the year entirely free for military training and maneuvers.

Now, I should like to say also that those 720 hours approximate the number of student clock hours in the average school, so that we could give, in addition to all of that military training, which is as much as has ever been given, this additional vocational training, and carry a man along in his educational training so that he would not lose any time at all over what he might have done, had he been able to go to school in civilian institutions, and we believe we will give him better educational training if we can carry out our plans.

Mr. FIELDS. Then, on a percentage basis, calling the eight-hour day 100 per cent, five-eighths of which is for military training and three-eighths for vocational training, the three-eighths cost 1.25 per cent, as compared with the remainder of the five hours' military training, which is a very light item for vocational training.

Mr. GREENE. Are you counting any overhead, or any investment in plant?

Mr. FIELDS. I am showing the whole estimate given for vocational training.

Now, going back to the question of training for military purposes again, in the Air Service we can not operate the Air Service without mechanics. That is a demonstrated fact, is it not?

Col. REES. Yes.

Mr. FIELDS. We can not conduct the Ordnance service without mechanics, we can not conduct the motor service without mechanics and men who understand the handling of engines? Those men we did not have when the war started, and you are training them and fitting them for that service now, as I understand it?

Col. REES. Not only the Motor Transport Corps men but the men of the line in Motor Transport Corps duty. That is, we are making mechanics out of them.

Mr. FIELDS. And in many other activities of the Army too numerous to mention, you are preparing men technically for that work, so that they could perform it should the Army call upon them to do so?

Col. REES. Yes.

Mr. FIELDS. That is all.

Mr. McKENZIE. You say you have 107 different lines of vocational training. The soldier, as I understand it, has the option of making a selection of which one of the various branches of the studies he will take up?

Col. REES. Within the limit of the courses which are offered at the different camps.

Mr. McKENZIE. Now, can a soldier take up more than one course? Could he take up two, for instance? For instance, if a man wants to take up mechanics and music he could do both, could he not?

Col. REES. It all depends upon the educational schedule, sir. He might be able to do that.

Mr. McKENZIE. You do not pretend, then, to have a force of teachers at each camp that could take care of the whole 107 different trades?

Col. REES. No, sir. We expect to have them taught throughout the Army, but not all at each station.

Mr. GREENE. How long would it take, if this thing becomes established, for a soldier, as the next step, to secure his transfer back to another organization that teaches anything he wants to learn?

Col. REES. We have established a definite policy, sir, that the vocational training will be brought to the soldier in his organization, and that if he desires any other kind of training that he can not have it if he has been assigned to that organization. He can, however, Mr. Greene, indicate when he enlists, what training he desires to take, and he can be guided by the recruiting officer to a given organization or station, provided that station is on the list to which recruits can be sent.

Mr. GREENE. What is the most popular craft that seems to be taught now?

Col. REES. Auto mechanics is the most popular.

Mr. GREENE. Then it has led again to this change in policy, that an enlisted man went to the Army heretofore for the Army's sake, or his own progress primarily, but he went into the Army to take what the Army had and to go wherever the Army needed him and did not express a preference particularly. But now we have gone as far toward—well, I do not want to say it too harshly, but a sort of soviet principle—that a man may elect when he comes in what kind of service and where.

Col. REES. Mr. Greene, under the present arrangements for recruiting, each recruiting office or district is given a list of the stations available or the organizations to which a recruit coming to that district may be assigned. Within those limitations he has his choice.

Mr. GREENE. The figures that were roughly approximated—and I understand that it is not desired that they shall be considered as exact—

Gen. LORD. We will correct that in the record, and give it to you exactly, when we get our final total.

Mr. GREENE. Those figures show a percentage of $1\frac{1}{2}$ per cent, on a basis, which is the approximate total of the bill, of \$500,000,000. \$6,250,000 being directly given for the purposes of vocational training in the Army. That is one-twentieth—or a little more—of the prewar annual cost of the Military Establishment. The camel's nose has got under the tent, and I only want to emphasize that just here, which will serve no other purpose particularly than to invite attention to it while it is early in the game, that some day, with this start, and with the growth that we have learned by experience we can expect from all those kinds of figures, we will be challenged on the floor, and this question will arise seriously for the Army, whether the Army really is the proper governmental agency to be expending this money for this purpose, and charging it off to the maintenance of the Military Establishment as such.

Now, following the question of Mr. Fields, a soldier is presumably on duty 24 hours in the day, is he not?

Col. REES. Yes, sir.

Mr. GREENE. There is no such thing as any schedule of hours which limits his responsibility or obligation to serve?

Col. REES. No.

Mr. FIELDS. There must be some control, as between his activities.

Mr. GREENE. I know, but he is engaged—

Mr. FIELDS. I know he never goes off duty, as far as that is concerned, or is never relieved of responsibility.

Mr. GREENE. I want to emphasize it simply, Brother Fields, because you can not arrive at any specific division of his time and the value of it, no matter what activity he may engage in, by that very fact that you may not compare it with the standard of the outside world where those methods are used. He is on duty 24 hours in the day, constructively, and even practically, and I wanted to emphasize in that particular that his whole expense from the time he puts on the uniform until he gets through with it is to be concerned in and only concerned in the only particular form of activities that civilized nations maintain that are wholly apart and distinguished from the ordinary normal avocations and functions in civil life. He is engaged in a life-and-death business 24 hours in the day.

Mr. FIELDS. If I may interject there again, Mr. Greene, I hope, and have always hoped that the time will come when this vocational training will help the soldier to understand that he is not only a part of the Army, but also of the outside world; that while his occupation for the time being is a little different, yet he is still a part of the outside world.

Mr. GREENE. I hope so. They are our own kinsmen, and I want to treat them in that way. We are trying in the outside world to allow those of them who do not want to be soldiers to do those very things to-day. That is why I am a little jealous of having them enter into those activities that we folks in the outside world thought were ours.

But how about this idea that when the war broke out, for instance, you had to begin to train mechanics? Is it not a fact that this country learned many other things by the war's experience, and early in the war, that while it had a great inchoate mass of trained, skilled mechanics, and men following all kinds of occupations and professions, it never had listed them and classified them so as to have them subject to call in that particular specialty in which they excelled, and that was one of the tasks that fell upon the Army, after it began the enrollment, to begin to search the service cards, and pick out these mechanics and other people, and find them and place them where they would be valuable in their respective trades, instead of taking in and beginning to train raw farmer boys, for instance, that has been suggested? Was not that in some part realized before the armistice?

Col. REES. Very well; and, in fact, the Army was calling for mechanics before the armistice, and putting them in where they belonged, and then giving them some training.

Mr. McKENZIE. I hope that neither you nor anyone else, for that matter, will get the idea that Mr. Greene and I, in our questions in regard to this matter, are not friendly to the Military Establishment. It is on account of our friendship for the Military Establishment that we are trying to guard against loading it up with outside, auxiliary agencies, that, if carried out to a final conclusion, as suggested, in our imagination we can see the man in uniform, the officer in uniform disappearing over the walls, and our Military Establishment being discredited, so far as the commissioned person-

nel and the man who wears the uniform as an officer are concerned, and that is what I have in mind, and what we are seriously and earnestly contending and trying to preserve, if possible, by not loading it down to such an extent that the criticism will come that the Military Establishment has become too expensive, and we must abolish it, and get rid of it, or cut it down.

Now, after the preliminary questions that we have asked you in connection with the policy here, we would like to know something about the items. I suppose you have the items there, and if you will kindly give us a statement as to how you expect to spend this \$6,562,000, we will be obliged to you.

Col. REES. I have here an itemized estimate on the basis of 299,000 men.

Mr. McKENZIE. I understand from Gen. Lord's figures that for an Army of 175,000 men it would be approximately \$6,562,500.

Col. REES. Yes, sir.

Mr. McKENZIE. And your items would be simply cut down proportionately, but we would like to know how you have them segregated and get that in the record, if you will kindly take them up one by one, and explain them.

Col. REES. I would like to say, by way of introduction, Mr. Chairman, that this estimate, you will find, is one very largely based upon a civilian personnel. I want to assure the committee, however, that the plan of the War Department in the development of vocational education in the Army is as fast as possible to militarize it, but we do need the civilian teachers, supervisors, and experts, in order to develop education and get it on a firm and sound educational basis, during which time we will train our officers and our enlisted men for teachers, so that they will from year to year displace a number of the civilian employees that we have.

Mr. GREENE. Would it hinder your thought if I asked a question there?

Col. REES. No, sir.

Mr. GREENE. Some of these trades and occupations are so highly technical and specialized that they really require the lifetime application of anyone to become a feature in them. Now, how is a military man going to carry on two professions?

Col. REES. We will always have to have highly expert supervisors of this work, who will be able to keep in touch with the very best progress of education in civil life and bring it to the Army; but for the general run of teachers we can train a man to teach a vocation in a relatively short time, so within a year we can hold unit schools for officers, the junior officers, and teach them to become teachers. We can do it also with the noncommissioned officers, and gradually build up a teaching force in the Army.

Mr. McKENZIE. I might add there, if you will permit me, that, of course, you understand that the reorganization bill that passed the House carries a provision in it for sending young officers to the technical schools and preparing the men for all the very highest kind of vocations.

Col. REES. Yes, sir.

Mr. GREENE. Mr. McKenzie very aptly stated my mind toward the thing and his own, because the questions that may have been a

little bit pointed, may be taken to mean that we are hostile to some part of this business. We certainly are not to the Army, and I hope not to our own country and its best needs. I dare say that some military men of experience already have thought of some things that it was a mistake originally to have introduced into a fighting force, and when I say that I do not mean to limit the application of the term "fighting," but merely the so-called practical campaign Army, and the old Military Establishment, that included its own men as professors in all the staffs, and so on, and groups of specialists of one kind or another who were thereafter to be designated by military rank and style and title, and to be called officers of the Army.

There has been a good deal of confusion about this in the popular mind, and I think it has done more than anything else to make it difficult to obtain proper support for the Army, because they found that all kinds of people who, according to the ordinary understanding of the lay mind, were not military men, were still captains, colonels, brigadiers, and all that sort of thing, although they had no relation to the Army that the average mind could understand. Now, keeping that in mind and trying to profit by the mistake of it are we going to introduce into the commissioned personnel of the Army a lot of schoolmasters and put military titles and designations on them?

Col. REES. Oh, no, sir.

Mr. GREENE. Then it is really practical, Colonel—and I am asking you this in all seriousness—for a young man to start out in the Army and acquire the technical instruction which is necessary for his efficiency in any of the arms of the service, and at the same time master some civilian craft so that he can either teach or supervise the teaching?

Col. REES. I believe he could start in the trades and could become proficient enough so that he could, during the time when the vocational training was going on, completely teach a trade after he had learned it.

Mr. GREENE. That is just the point. You see, I am keeping in mind this as a basic theory: Every shavetail is a potential field marshal, and all the way along up the files and grades he is supposed to be gaining the necessary military knowledge and all that is more or less related to it; and then, after he has passed out of the company administration, and has gone out of the files, and has gone into his field rank, he has more or less measure of responsibility and capacity to handle tactical maneuvers, and his field of activity is constantly broadening, until pretty soon he sits in the councils of those who plan battles. And, of course, planning battles to-day takes into consideration far more than the mere tactical elements in the field of combat.

That is a great task ahead of the young shavetail. He must be constantly growing and growing, not only in his knowledge of the technique of the immediate application, but in a broader knowledge of men and things, nations and their policies, and the elements of economic and social concern that go to make up the fighting force of a modern army in modern warfare. That is quite a tremendous task for any man who wants to be a good officer, and not fall into class C. How are you going to ask that same fellow, with that great

responsibility upon him, also to go and learn what another man in civil life considers a life task?

Mr. FIELDS. Is not that a fine argument for the broadening of the military curriculum?

Mr. GREENE. It is; but it is also a fine argument for trying to put some ambition and brains into these school men, because I think the average Army officer of to-day, with the constantly increasing plan for broader education, has got his hands full.

Mr. MCKENZIE. All, Colonel; you may go ahead with your items.

Col. REES. I might say that this personnel, which we feel is urgently needed, is for the purpose next year of developing and placing on a solid foundation our educational work. I do believe, Mr. Greene, that it will be of a great deal of advantage for a young officer to learn a trade, and that he would have an opportunity during his early years of learning it, and learning by teaching it. I think that we could utilize to a certain extent junior officers and enlisted men as teachers. Therefore I simply wish to state that I am confident that the proportion of the appropriation allotted to personnel is greater this year (fiscal year 1921) than it will be in subsequent years, on the basis of the continuance of vocational training in the Army; and I will say, in speaking of the items, that equipment is small in this estimate because we have been able to get a large quantity of equipment from the surplus war supplies, and by that means I believe that we will be equipped for this vocational training in better shape next year for good, substantial work than we probably would be in 20 years from building up from successive appropriations, which we could not expect to get in large sums; so that we are placed in a very advantageous position on account of the authorized use of the surplus war supplies in building up this work in the camps.

Mr. GREENE. Of course, we have not had sufficient experience in it to be accurate about it, but there is a constantly increasing rate of consumption in the use of these supplies, so, sooner or later we shall be asked to replace them.

Col. REES. There will have to be some replacements; yes, sir.

Mr. GREENE. Now, then, if \$6,500,000 represents the start-out, with plenty of supplies on hand, or practically or approximately so, that does not by any means mean that we are to expect not much more than \$6,000,000 a year right along hereafter, does it? It means it will grow?

Col. REES. It is very difficult this year, sir, for me to make an estimate of what we will require in the way of equipment. That is for, say, two years hence.

The CHAIRMAN. I can realize that.

Col. REES. But I think, from the start that we have made that we can carry on with a pretty constant appropriation.

You take the machine tools that we are getting from the surplus supplies. School experience has indicated that a machine tool, carefully cared for, will last 25 years—that is, be serviceable for instruction purposes for 25 years—that is the experience of two schools that I visited and inquired of.

Mr. MCKENZIE. For fear I may forget it, I would like to have put in the record about what percentage of the soldiers took this training. If you do not know, you can insert it in your statement.

Col. REES. I can give that to you right now, sir.

We have been checking up on it through the year. In October, when we were getting pretty well started we had 15,742 men and 36,055 in December. The February reports are not all in, but for less than half of the Army reported we have 28,288, which would indicate the present number taking educational and vocational training to be in the neighborhood of 60,000, based on the figures that have gone before. That is entirely independent of the kind of vocational training that a man must get in the technical services that have vocational value.

Mr. FIELDS. That is that which he learns as a matter of course in his occupation as a soldier?

Col. REES. Yes. I have not the figures on it for February as yet, but for December we had some 56,000 men.

Mr. McKENZIE. You could put into the hearings, I take it, the number of men taking the various kinds of training also, could you not?

Col. REES. The different kinds of training? I have that, sir.

Mr. McKENZIE. If you have a statement of that kind, just insert the whole statement in the record. That will save time.

(The statement referred to is as follows:)

Partial report of educational and vocational subjects taught in Army posts and camps, Feb. 29, 1920.

Subject.	Number of posts giving instruction in this subject.	Number of men in course.	Subject.	Number of posts giving instruction in this subject.	Number of men in course.
Educational courses:			Automotive department—		
Algebra.....	20	157	Continued.		
Arithmetic.....	85	2,365	Tire repairman and vul-		
Civics.....	8	201	canizer.....	18	182
Economics.....	1	4	Truck driver.....	29	1,115
English.....	85	2,506	Wheelwright (auto).....	2	85
Geography.....	40	981	Building department:		
Geometry.....	12	43	Brick mason.....	1	2
General history.....	6	118	Cabinetmaker.....	10	47
Modern languages.....	19	272	Carpenter.....	46	229
Spelling.....	79	2,432	Concrete worker.....	2	7
Trigonometry.....	8	9	Painter.....	36	158
United States history.....	44	1,018	Pattern maker.....	1	1
Anatomy.....	2	80	Stonemason.....	2	4
Chemistry.....	4	64	Structural worker.....	1	84
Penmanship.....	53	1,891	Business department:		
Reading.....	29	974	Advertising.....	2	3
Vocational courses:			Bookkeeper.....	34	284
Agronomy.....	2	7	Business administration.....	9	126
Animal husbandry.....	5	23	Clerk, general.....	40	504
Horticulture.....	3	51	Commercial law.....	2	7
Truck gardening.....	10	62	Salesmanship.....	1	1
Animal transportation:			Statistician.....	1	10
Carrador and packmaster.....	4	29	Stenography.....	47	541
Farrier.....	9	60	Stock keeper.....	12	85
Horseherd.....	14	46	Typist.....	56	1,071
Stable management.....	10	27	Electrical department:		
Teamster.....	8	38	Electrician.....	9	200
Wagon master.....	1	5	Factory electrician.....	11	77
Automotive department:			Interior lineman.....	5	32
Auto driver.....	50	1,645	Lineman, telegraph and		
Auto and truck repair-			telephone.....	16	138
man.....	99	2,242	Power lineman.....	2	7
Motor-cycle driver.....	19	445	Radio operator.....	33	338
Motor-cycle repairman.....	16	242	Radio specialist.....	4	74
Storage battery specialist.....	19	244	Switchboard.....	6	27
Tractor driver.....	8	34	Telegraph electrician.....	8	41
Tractor repairman.....	4	25	Telegraph operator.....	21	271

*Partial report of educational and vocational subjects taught in Army posts and camps.
Feb. 29, 1920—Continued.*

Subject.	Number of posts giving instruction in this subject.	Number of men in course.	Subject.	Number of posts giving instruction in this subject.	Number of men in course.
Electrical department—Con.			Metal department:		
Telephone electrician.....	7	50	Blacksmith.....	22	
Telephone operator.....	18	90	Pipe fitter.....	4	
Food department:			Plumber.....	33	
Bakers and cooks.....	43	227	Sheet-metal worker.....	6	
Butchers.....	5	12	Welder.....	14	
Meat cutter.....	3	3	Music department:		
Mess sergeant.....	12	35	Musicians: Band, piano, glee club, orchestra, harmony and theory.....	40	
Highway construction and topography:			Power department:		
Draftsman, topographic.....	4	30	Locomotive engineering.....	1	
Highway and bridges.....	1	16	Dynamo tender.....	2	
Mapping.....	3	27	Fireman.....	16	
Surveyor.....	6	16	Gas-engine worker.....	12	
Leather department:			Oil-engine worker.....	1	
Leather worker.....	3	3	Refrigeration worker.....	1	
Saddlers and harness maker.....	5	46	Steam-engine worker.....	8	
Shoemaker.....	10	35	Printing department:		
Machine department:			Linotype.....	1	
Airplane mechanic.....	19	589	Lithographer.....	1	
Airplane rigger.....	1	12	Photographer.....	20	
Draftsman, mechanical.....	26	193	Printer, including compositor, pressman, etc.....	15	
Foundryman.....	1	2	Textile department:		
General machinist.....	37	316	Canvas worker.....	6	
Instrument repair man.....	4	21	Cordage worker.....	1	
Machine department.....	1	11	Tailor.....	7	
Mechanic, general.....	5	137	Miscellaneous department:		
Mechanic, gunsmith.....	1	1	Laundryman.....	7	
Mechanic, machine gun.....	3	6	Moving-picture operator.....	27	
Medical department.....	2	11	Barbers.....	6	
Bacteriologist.....	1	5	Hydrogen production.....	2	
Biologist.....	4	15	Jewelry, repair and engraving.....	3	
Embalmer.....	2	5			
Dental assistant.....	9	38			
Nurse.....	13	375			
Pharmacist.....	16	114			
Surgical attendant.....	7	106			
X-ray worker.....	10	97			

Fifty additional miscellaneous courses, 884, including basketry, dramatics, hydrotherapy, illustrators and designers, mattress manufacturing, meteorology, motor-boat operator, pigeon fancier, public speaking, rubber-stamp making, rug weaving, showcard writing, trimming and upholstering, waiters.

The above is but a partial report based on returns from camps and posts under date of February 29, 1920.

Mr. FIELDS. I wish you would put in the record the total enlisted strength of the Army. For instance, in December you had 15,000, and in October, 15,742, taking this training.

Col. REES. Yes, sir.

Mr. FIELDS. It would be well to show what the enlisted strength of the Army was at that time, in December?

Col. REES. On October 31, December 31, and February 29?

Mr. FIELDS. Yes; which would give us an idea of what per cent of that number was taking the training.

Strength United States Army.

	Officers.	Enlisted men.	Taking vocational training.
As of October 31, 1919:			
In United States.....	20,846	157,898	.....
Outside United States.....	3,040	56,916	.....
Total.....	23,886	214,804	1 15,742
As of December 31, 1919:			
In United States.....	15,941	167,317	.....
Outside United States.....	2,174	48,394	.....
Total.....	18,115	215,711	1 36,056
As of February 29, 1920:			
In United States.....	14,974	185,095	.....
Outside United States.....	2,304	49,911	.....
Total.....	17,278	215,006	1 61,000

¹ Estimated from partial reports.

Mr. McKENZIE. All right, Col. Rees, you may proceed.

Col. REES. On the basis of 299,000 men, we ask for \$10,690,000. A comparison of the cost of education and vocational training in civil life is as follows: Sound teaching in general education costs about 10 cents per student hour; and on the basis of our estimate of 700, or, to be exact, 738 hours according to the calendar, that would be \$73.80 per student per year. And similarly, for vocational training, it costs 17 cents per student hour in technical schools, which make a cost of \$125.46, on our basis, per year.

Mr. McKENZIE. Does that 17 cents include the overhead, taking in the material used, or is that just for the teaching force?

Col. REES. That is for the current yearly expenses, carrying the increase and the repair and the maintenance of the school, but not the plant.

Mr. McKENZIE. That is in the civil institutions?

Col. REES. That is in the civil institutions.

Mr. McKENZIE. Seventeen cents per student per hour?

Col. REES. Yes, sir.

Mr. McKENZIE. The plant is not included?

Col. REES. No; the maintenance and upkeep of the plant——

Mr. McKENZIE (interposing). Is charged off?

Col. REES. No; it is not charged off; it is included.

Mr. McKENZIE. It is included?

Col. REES. Yes.

Mr. McKENZIE. What corresponding or analagous calculation is made in the Army's estimate of 10 cents an hour to make that a fair comparison?

Mr. McKENZIE. No, sir; that is not the basis of this estimate. I said general education in the public-school system costs 10 cents.

Mr. McKENZIE. Oh, I thought that was in the Army.

Col. REES. No.

Mr. McKENZIE. I beg your pardon.

Col. REES. Now, the basis of the estimate gives the cost to the Army at 6.8 cents.

Mr. GREENE. Then that brings up this question: Is the Army, then, using the same basis of computation? Is a charge made for overhead and depreciation?

Col. REES. It will be indicated in the items here; yes, sir.

Mr. GREENE. All right.

Mr. McKENZIE. Well, will that be a perfectly fair element to be charged against vocational training? I want to be perfectly fair in the matter. Of course, we have got to maintain these Army post- and the officers and everything that goes along with that. Would you intend, Mr. Greene, to include in that a part of that cost, or simply such new shops and machinery as it would be necessary to employ?

Col. REES. No—

Mr. GREENE (interposing). I think we could make it on this basis exactly: If I build a house which I subsequently rent out to somebody, it does not make any difference to the man who subsequently rents it whether I already owned the house and would have to make the repairs anyhow or not; he ought to stand in the amount of his rent the cost of that depreciation, because he gets the benefit of it.

Col. REES. Yes, sir.

Mr. GREENE. The fact that I originally owned the house does not relieve him from the obligation to pay that, because he shares in the benefits of it.

Col. REES. Yes. I want to say that this low cost that we can get is because of the surplus war supplies and the considerable number of our Army personnel. The Army personnel, of course, carries on all the administrative work that pertains to the education program.

Mr. GREENE. Is there anything in that estimate for vocational education that charges for their salaries?

Col. REES. No, sir.

Mr. GREENE. Well, it ought to be in there.

Col. REES. Of course, they perform their duties—

Mr. GREENE (interposing). I know, but that is the same thing as the cost of the original plant: if you get the benefits of it, you should contribute to it.

Mr. McKENZIE. Well, the manner of charging the cost will not help out so very much.

Col. REES. No, sir.

Mr. McKENZIE. It is the round numbers that we look at.

Col. REES. Then, in that estimate there is included:

Appropriation, "Vocational training."

Items.	Estimated as required for enlisted strength of—			
	175,000	200,000	225,000	250,000
For the employment of the necessary civilian instructors in the most important trades.....	\$1,504,630	\$5,442,130	\$6,379,630	\$6,622,130
For the payment of their traveling and other expenses, as authorized by existing law.....	60,000	60,000	60,000	60,000
For the purchase of carpenter's, mason's, electrician's, and such other tools and equipment as may be required, including machines used in connection with the trades.....	1,217,750	1,217,750	1,217,750	1,217,750
For the purchase of materials and other supplies necessary for instruction and training purposes.....	475,120	475,120	475,120	475,120
For the construction of such buildings needed for vocational training in agriculture, for shops, storage, and shelter of machinery.....	255,000	255,000	255,000	255,000
And for such purposes not enumerated above as the Secretary of War may deem advisable to be expended in the discretion and under the direction of the Secretary of War.....	50,000	50,000	50,000	50,000
Total.....	6,562,500	7,500,000	8,437,500	10,680,000

Mr. McKENZIE. When you come to that item of "Other miscellaneous items" will you name four or five of the articles that are included in that?

Col. REES. Yes, sir; I have that here.

Mr. McKENZIE. You need not read it now; but for the benefit of the record, I wish you would insert that information.

Col. REES. Yes, sir; I will put that in record.

Mr. McKENZIE. All right.

(The statement referred to is as follows:)

In the development of a new project, there inevitably arise certain unforeseen necessities. A small leeway in a new project is advisable. This \$50,000 is designed to cover such a condition.

Col. REES. Now, that personnel that is required for vocational training in 107, instead of 117, you will remember.

Mr. McKENZIE. Yes; that may be corrected in the record.

Col. REES. There is an automotive department; an electrical department; building department; textile department; food department; animal transportation department; metal department; printing department; medical department; highway construction topography department; power department; music department; letter department; machine department; business department; agricultural department; and miscellaneous department. There are a number of courses under those different departments, totaling 107.

In the general education, there is the basic course, which is the elementary course, of 8 courses; and the advanced course, of 5 courses, which make 13, or a total for general education and vocational training of 120 courses.

Mr. GREENE. If you will permit me right there, I will suggest that that estimate that you make of about 6 cents an hour—that was for the cost in the Army, was it?

Col. REES. Yes, sir.

Mr. GREENE. Not charging in the salaries of the officers and enlisted men as part of the overhead? That very thing, you see, will enter into what I was trying to suggest a while ago. Here you are having a more or less civilian benefit hitched onto the Army, taking advantage of the Army's plant, overhead, or establishment, paying nothing for it, adding to the expense of the Army otherwise, and yet escaping its own responsibility for payment out of the National Treasury on its own account, for its own purpose; the whole business being camouflaged as an expense of the military service.

That is what I had in mind, in my little warning that by and by, as this grows and grows and grows the poor Army will be charged on the outside as being a very extravagant thing and "militarism" will be denounced, because they will say it costs so much.

Col. REES. On a six months' tour of duty basis we could give them a citizenship training and some vocational guidance, but of course we could not give them a good year's education.

Mr. GREENE. Now then, it gets back to this: You may think I am wasting words about the philosophy of the thing; but after all, this country was founded on the theory of the greatest amount of local self-government that was consistent with national security; and we all know that as a practical proposition, getting out of any idealism, the people who can not govern and take care of and protect them-

selves at home in their everyday interests of their social order can not in the long run of years maintain a great nation, because the nation, for its own guidance and its own operations, draws upon every one of those little neighborhood settlements, where citizenship must be first taught; and it seems to me that, if we are trying to lay stress upon teaching citizenship at the other end, when a man gets up into the national affairs and interests, we are doing just the reverse of what we used to think was for the safety and security of our country, that citizenship, in its moral obligations and its spirit of responsibility, was cradled in the home and in the home neighborhood.

Mr. McKENZIE. You may proceed, Col. Rees.

Col. REES. We did some good vocational training in a two months' period during the war; and we turned out good, practical men for military work, who knew their trade very thoroughly; that is, for the particular military technical jobs that we wanted them to perform. So, perhaps, we could give them something that would be of benefit even on a six months' tour of duty.

Mr. GREENE. I do not think you will find anybody who would deny that; if there is any attempt to minimize practical benefit and advantage of military training, it will be an absurdity. The whole country needs it. And I think it would be a good thing if we could induce our young men to go more into the manual craft and occupations, instead of learning some clerical or professional occupation and starving to death respectably in a white shirt. I think that thing is all to the advantage of the country and the world. But our purpose, of course, is confined to the particular subject; we have the responsibility as lawmakers who must act upon a constitutional basis, and upon a certain definite policy of the Government. And these things which attach themselves occasionally to the ancient structure, as a mere expedient to serve a passing purpose, possibly—I know it is a passing purpose, in the sense that they do not get sufficient of it outside; if they were sufficiently supplied with that sort of thing outside, then you would not be doing it, you see—well, it is a passing thing because the pay of the outside men may not equal yours just now, but may equal it later. Those expedients, carefully added on to a great structure, either become the source of completely changing the original institution and policy, little by little, and insidiously, until people wake up by-and-by to find that we have gone farther yet in the evil of concentration of government in the National Capital, and that the people themselves are looking to Washington as a Santa Claus, and are no longer doing things for themselves as they used to do. And whenever a country gets there, that country is starting toward the toboggan—always. That is the lesson of history. And we have to keep fighting that sort of thing: no matter how much we approve of the purpose, the question is whether the end justifies the means.

Mr. McKENZIE. You may proceed, Col. Rees.

Col. REES. Shall I read this detailed statement, Mr. Chairman, or just put it in the record?

Mr. McKENZIE. Well, I think the details can go into the record of the hearing. All that we desire is a brief statement of each item of this expenditure. You have made that, as I understand it, and you can put it into the hearings after you have received the transcript of

the hearing, and it will be an accommodation to the chairman of the committee, Mr. Kahn, if you will get the transcript of your statement back as soon as possible after it reaches you.

Col. REES. Yes, sir.

Mr. McKENZIE. Because he is anxious to have the hearings printed, so that we may get the bill out in a few days.

Col. REES. Yes, sir.

(The statement referred to appears on page 811.)

Mr. GREENE. Has Col. Rees finished his statement, Mr. Chairman?

Mr. McKENZIE. If you want to explain anything further, Col. Rees, we shall be glad to hear you.

Col. REES. I simply want to make the strongest plea that I can make for your support if we are going to put this education over in the Army, for an adequate civilian personnel for next year, in order that we may develop education along the lines that I have sketched to you and get it absolutely on a sound educational policy basis, so that it will command the respect of the educational world, of the industrial world, and of labor, the three elements of the community that are vitally interested in this work and in the benefit of it.

From the Army standpoint, I hope that I have made it clear that there is a strict military necessity for at least 90 per cent of this training that we are giving the men. There may be one or two—I will not say one or two, but several—of the vocations selected that we might not be able to say would have a strict military application.

Mr. McKENZIE. Col. Rees, that brings to mind a question that I want to ask you; it came up in the hearings this morning—about band instruments to be furnished the reserve officers' training camps. Now, do you have anything to do with that?

Col. REES. No, sir; I have not.

Mr. McKENZIE. That would not come under the vocational training?

Col. REES. No, sir.

Mr. McKENZIE. Well, I think this comes under the vocational training of reserve officers at the training camp; it involves the purchase of musical instruments and other articles to be sent there; now, these officers, I take it, are all men who are engaged in some vocation in life?

Gen. LORD. That item is carried under "Clothing, camp, and garrison equipage" and the amount mentioned is for the Reserve Officers' Training Corps.

Col. REES. That was for the Reserve Officers' Training Corps.

Mr. McKENZIE. That would be purely military training, rather than vocational training?

Col. REES. Yes, sir.

Mr. McKENZIE. It would not come under your jurisdiction?

Col. REES. No, sir; you see, this is all educational and vocational work within the Army; the Reserve Officers' Training Corps is military training in the schools.

Mr. McKENZIE. Of course, that is a small item, but it is rather interesting to know that we are appropriating money for reserve officers, to go to a training camp for two or three weeks and have instruction and practice on some band instruments; it is a very small matter, of course.

Gen. LORD. It is a small matter, but I think that material is issued from stock to bands organized in the Reserve Officers' Training Corps. I will have it looked into, so that you have something definite in the record.

Mr. McKENZIE. Yes; somebody may ask us about it in the House. and it would be rather embarrassing if we could not explain it.

[NOTE.—As stated above, the estimate mentioned by Mr. McKenzie is included in the estimate for clothing, and camp and garrison equipage, and is for band instruments to be used by band organized in the Reserve Officers' Training Corps.]

Mr. FIELDS. What does this bill carry for the recruiting service?

Gen. LORD. That was read into the record yesterday, in connection with "Incidental expenses." by Col. Daly. I have his estimate here: but he gave it on the four different strengths of the Army, and it is in the record.

Mr. FIELDS. Do you recall what the bill that we passed a few weeks ago carried for the recruiting service?

Gen. LORD. That was for traveling expenses in place of mileage.

Mr. FIELDS. Do you recall the amount?

Gen. LORD. There was no amount specified; it was to pay actual expenses instead of mileage.

Mr. GREENE. That has not yet passed Congress.

Mr. FIELDS. I just want to submit this observation: That if the Army should become so attractive, through the vocational training, that it would not be necessary to keep up this recruiting force in order to get enlistments, that would be a good feature of this vocational training.

Mr. GREENE. Following up that question as to the recruiting, that is what I wanted to ask about a moment ago: You carried on a crusade or a campaign for recruiting which began in January and continued to March 31?

Col. REES. Yes, sir.

Mr. GREENE. There were three months of intensive recruiting, in which all the advantages of vocational training were set out, in rather glowing colors, were they not?

Col. REES. They were; yes, sir.

Mr. GREENE. And you got how many recruits?

Col. REES. I have not the figures here.

Mr. GREENE. Well, it does not matter; they expected to get some eighty and odd thousand, and they got somewhere near 20,000; now, it is urged for this proposition for vocational training that it will be one of the probable inducements to the young men to join the Army. Yet, this first try out does not bear that theory out very much, does it?

Col. REES. It is very difficult to get recruits at the present time: but of those recruits that came into the Army under that campaign that has just been carried on. I have been informed by the recruiting service that a very large percentage of those young men enlisted for the educational advantages that they were to get.

Mr. GREENE. Exactly. Now, the very first part of your reply, Col. Rees, reminds me that, year after year, we have been told by the recruiting service of the Army that, after all, the inducement to come into the service depended very largely upon the state of the economic

conditions outside; that when there was plenty of work outside, at high prices, men were slow to enlist; and when the industrial life slowed down, or wages lowered, or there was an economic depression generally, then there was a general turning to and desire to enlist in the Army. That was the barometer, or the indication of the barometer, of the recruiting service for a good many years, was it not?

Col. REES. Yes, sir.

Mr. GREENE. Then, how would you figure out logically that vocational training would be an inducement to young men to go into the Army, except, as I have just said, where there is a great demand for expert workmen on the outside. men would come into the Army just to get the vocational training and get out and get the benefit of that training in the increased wages they would receive outside; and that would mean no increase in the Army at all; that is the only increase that will ever stay hooked to the Army to any degree—to depend upon the time when the outside world does not offer the inducement in the way of high wages, etc.

Col. REES. I thoroughly believe that as soon as this educational work is thoroughly established in the Army, together with the producing of a good, fine environment in the camps, through the recreational activities that we are developing, it will be a magnet to draw the men into the service, and that it will be a means whereby a man will decide to come into the Army, rather than to take the high pay in civil life. I feel very confident of that. But we have got to show them absolutely that we have got something that is of value to them, something that is assured and well developed. And if we have a good thing I feel very confident that they will come into the Army.

Mr. GREENE. They will come in so as to be able to use that vocational training outside.

Col. REES. I beg your pardon.

Mr. GREENE. I say, they will come into the Army and get that vocational training so as to be able to use it outside of the Army.

Col. REES. They will come in for the period of the enlistment.

Mr. GREENE. Yes; I know; but in order to use the training outside again.

Col. REES. That will be one of their incentives, no doubt.

Mr. GREENE. That leads me again to this thought: Some day, in your affection for the service and in your great concern about perpetuating its strength and its integrity, I believe you will come around to the opinion that there should be some way to show that a part of this money that you are asking for for vocational training ought not to be charged to the Military Establishment; that it is a civilian benefit, for civilian purposes, although it may be grafted onto the Military Establishment; and that the Army as such ought not to stand accountable to the public for having consumed so much money for "militarism," as some people call it, when it was not for that purpose at all.

Col. REES. It is hard for me to make an estimate on that basis. Of course, this is a new idea, Mr. Greene, that you have brought out. It seems to me that the justification for giving the education, which, as you say, should be chargeable to some other source than the War Department appropriation, is the War Department's re-

sponsibility to these men while they are in the service, to give them all the advantage that it is possible to give them while they are in the service, both to make them better soldiers from day to day by increasing their intelligence and their manual skill and also a responsibility to them in looking forward to their life's work, in seeing that they do return to civil life better fitted for it, and also it is an economic gain to the Government as a whole and to the country as a whole to turn these men out improved in mind and improved in technical skill.

Mr. GREENE. Nobody can dispute the moral purpose involved in it; the only question there would be whether the Government is instituted for moral purposes; that is, moral in that sense. The second proposition is, undoubtedly, that the return of men skilled in trades to civil life is an advantage to civil life. The question there is, whether the Federal Government was instituted for that purpose.

And it is on those two points that I think you will find the whole question rests. Nobody disputes the benefits; the question is as to our scheme of Government, its policy, and its accountability to the taxpayers; and the question then is, whether, as a great, broad institutional policy, we are not working from the wrong end to confer a so-called benefit. That is all.

Col. REES. I think that all those things which you consider as being for the benefit of the individual and as something outside of the Army—I think we are entirely justified in stating that they are an incidental benefit to a very large degree. I made the estimate of 90 per cent; but they are an incident—

Mr. GREENE (interposing). I know that, Col. Rees; but the advertising seems to run the other way; the advertising seems to run to the effect that this is not an incidental benefit which you may get by being a soldier; the advertising seems to be that "We ask you to come and be a soldier a little while in order to take that so-called incident out and use it as a permanent asset somewhere else."

Col. REES. Well, is it not a military advantage—well, perhaps I ought not to ask the question of you.

Mr. GREENE. Yes; go ahead.

Col. REES. But I believe it is a military advantage for us to train soldiers and let them go out in civil life; it adds to the military strength of the country.

Mr. GREENE. Yes; but when we do that let us do it on a definite policy, and not piecemeal; let us do that on the good old war powers of the Government, to obligate its citizens to defend the country, just exactly as it obligates their pocketbooks to support the country; let us have it apply equally all around, to everybody, with no slackers.

Mr. MCKENZIE. If that is all, Col. Rees, we are very much obliged to you.

Gen. LORD. Mr. Chairman, I think that Col. Rees wishes to submit an amended phraseology, which will eliminate the paragraph for Military Post Exchanges on page 36. The total he has submitted for vocational training includes the amount carried in the bill under Military Post Exchanges. Is that not correct?

Col. REES. Yes.

Mr. MCKENZIE. Well, if you will give a copy of that to the reporter, Col. Rees, it will be inserted in the record.

(The proposed amendment is as follows:)

WORDING OF CURRENT ACT, VOCATIONAL
TRAINING.

For the employment of the necessary civilian instructors in the most important trades, for the purchase of carpenter's, machinist's, mason's, electrician's, and such other tools and equipment as may be required, including machines used in connection with the trades; for the purchase of materials and other supplies necessary for instruction and training purposes, and the construction of such buildings needed for vocational training in agriculture; for shops, storage, and shelter of machinery as may be necessary to carry out the provisions of section 27 of the act approved June 3, 1916, authorizing, in addition to the military training of soldiers while in the active service, means for securing an opportunity to study and receive instruction upon educational lines of such character as to increase their military efficiency and enable them to return to civil life better equipped for industrial, commercial, and general business occupations, part of this instruction to consist of vocational education either in agriculture or the mechanic arts, \$2,000,000. (Pub. 7, 66th Cong., p. 18, July 11, 1919.)

PROPOSED WORDING VOCATIONAL TRAIN-
ING.

For the employment of the necessary civilian instructors in the most important trades, *and for the payment of their traveling and other expenses, as authorized by existing law*; for the purchase of carpenter's, machinist's, mason's, electrician's, and such other tools and equipment as may be required, including machines used in connection with the trades; for the purchase of materials and other supplies necessary for instruction and training purposes and the construction of such buildings needed for vocational training in agriculture; for shops, storage, and shelter of machinery, *and for such purposes not enumerated above as the Secretary of War may deem advisable, to be expended in the discretion and under the direction of the Secretary of War*, as may be necessary to carry out the provisions of section 27 of the act approved June 3, 1916, authorizing, in addition to the military training of soldiers while in the active service, means for securing an opportunity to study and receive instruction upon educational lines of such character as to increase their military efficiency and enable them to return to civil life better equipped for industrial, commercial, and general business occupations, part of this instruction to consist of vocational education either in agriculture or the mechanic arts, \$——.

Mr. McKENZIE. Now, with regard to the question of military post exchanges, that does not come under your jurisdiction, does it?

Col. REES. It does; yes, sir. You see, I have responsibilities for education and recreation in the Army.

Mr. McKENZIE. Well, that raises a very important question in my mind: Do you intend, or is it the purpose of your branch of the service, to continue to permit civilians to operate and manage the recreational facilities at these Army posts instead of having them handled by the officers and enlisted men at the various posts?

Col. REES. During the war, as you gentlemen know, the welfare societies carried on a very extensive plan for the contentment and recreation of the soldiers in the camps.

Mr. McKENZIE. Yes.

Col. REES. They built huts, and they had their personnel, and they did a very remarkable piece of work, and I think we are indebted to them in a large degree for the clean Army that we had during the war. That demonstrated the fact that we should carry on the recreational features that were developed by these welfare societies. They withdrew from the Army on the 1st of November, and the Army has taken on the responsibility of perpetuating that work.

Mr. McKENZIE. Let me say this, so that you may get a full view of what I had in mind: Of course, I concede, and I believe every thinking man concedes, that they did do a great work during the war: with the several millions of men that we had in the camps and in the field during the war, it was impossible for the officers and the enlisted men of the Army to devote any of their time to that character of work, because they were engaged in the grim business of war, and it was perfectly fitting for these men, who, I assume, were not physically fit for soldiers or they would have been in the Army, to go into these camps and take up this work, and they are entitled to credit for that. Just the same as the good old mother was who sat up until 12 or 1 o'clock at night knitting sweaters or woolen socks for boys at the front, when, perhaps, she did not have any boy at the front herself. That is all appreciated by all of us, I am quite sure.

But I have talked with very good officers in the Army—I am not drawing any comparisons; you have been an officer for 20 years, and you may have a different view. But I am simply stating that I have talked with a number of officers whom I consider very capable and apparently honest, patriotic officers, and they have said to me that they hoped that the management and the control of all these recreational features at the various posts should be again in peace times turned back to the Army.

Col. REES. That is exactly what has been done, sir.

Mr. McKENZIE. And that no civilian, in the guise of a partial military man, should be permitted to come in between the captain, who is the father of his company, and his boys; that if there was anything confidential that they wanted to talk about, that they were in trouble over; anything that they wanted advice and intelligent help about, they should go to their captain, who is the proper man, instead of going to these men, who, as those officers told me, had created a feeling—this was before they were done away with—or, rather, who had somewhat destroyed the morale of his organization by going among the men and saying to them, "Now, do not go to your officers if you are in trouble; if you need a little assistance, or advice, or anything: that is our business; we are here to look after your needs along those lines; so come to us," and they said that there was a sort of division of authority there which bred a low morale. And I am very glad, indeed, to know that it is your purpose to turn this activity back to the Army officers and to the enlisted men to handle.

Col. REES. Well, it actually is so now, sir; we have a certain number of civilians working in the camps, with the service clubs, to take charge of the buildings and to help and encourage in the entertainment; they are not in any sense between the officer and the men; they have this distinct function of developing life and entertainment in the service club. The welfare societies turned over a large number of their huts, for the use of the Army. We now call them service clubs.

Mr. GREENE. Now, Col. Rees, if you are going to leave that personnel in—

Col. REES (interposing). No, sir.

Mr. GREENE. You are talking about the plant now?

Col. REES. I was just trying to define the duties. But I might make this discussion short, Mr. Chairman, and say that we are not going to have any service-club men next year.

Mr. GREENE. I wanted to ask you this question: You said you have a certain number of civilians who are now helping in this recreational work; is it intended to retain them?

Col. REES. No, sir: we are going to make a plea for the payment of some women, as in charge of our visitors' houses in the camps. Aside from a few expert men, in particular lines, we will do away with the men.

Mr. McKENZIE. That causes me to think of one thing: Does that have anything to do with the appointment of this lady from California as a sort of assistant to the Chief of Staff, to take charge of getting the men acquainted with the women, and so on and so forth? Now, is that following that policy out, that these ladies would be placed at these various posts?

Col. REES. Yes, sir; and they would be under her charge; she would be the head of those hostesses in developing this relationship of the men with the community and encouraging and promoting that—

Mr. McKENZIE (interposing). Let me interrupt you right there. You are a soldier; and do you not think now, thinking seriously, that it is a sort of insult to the American who puts on the uniform of a soldier and goes to a camp that he has got to have half a dozen men and women around to tell him how to act and what he shall do and all that sort of thing?

Col. REES. That is not their purpose, sir.

Mr. McKENZIE. I understand that it is not their purpose.

Col. REES. No.

Mr. McKENZIE. But I am simply saying—

Col. REES (interposing). We have a hostess house, a visitors' house, which we wish very much to maintain, and we want a woman there whose prime function is to be there, so as to provide a place where women can come, mothers and the sisters and friends of the men, and have decent, good surroundings in which to do that; that is their chief function, to take care of that house; to have one place in the post where men can bring their relatives and friends of the opposite sex.

Mr. McKENZIE. Well, it may be, Col. Rees, that I got the wrong impression in reading the article in the press that I read about it. I got the impression that our soldiers were a little, perhaps, uncouth, and did not know all of the rules, did not know the rudiments, and so on, of good society, and it was necessary to have some one there to kind of steer them right. Now, I hope I did get the wrong impression about that article.

Mr. GREENE. According to that, she is the social liaison officer.

Mr. McKENZIE. Well, I perhaps got the wrong impression about it.

Col. REES. Yes, sir.

Mr. GREENE. Well, this lady in the War Department, is she the head of the corps of matrons of these hostess houses, and so on?

Col. REES. She is simply employed, Mr. Greene, to be the directing head of this, to keep up the standard and training of these women; and also to have charge of the conduct and care and contentment of the women personnel employed in the camps; those are her chief functions.

Mr. GREENE. Well, how has the Army gotten along in years past? Men and women have been acquainted for a number of years, and they have worked out a sort of method which has been reduced to something like practical conventions for generations. How long is it since they needed a Government intermediary to preserve anything like a wholesome and decent atmosphere at an Army post?

Col. REES. Mr. Greene, the enlisted soldier had not a good status, nor community interests with persons outside Army posts. I think you know that as well as I do, or better. And we want, if we can, to promote, through having surroundings which invite it, the association of our men with a higher type of women than was possible when we simply let them go without any guidance or advice. And with these hostess houses, and somebody that can chaperone and look out for the girls that come there, the better element of the woman-kind in the community are going to come and be entertained by and associate with our soldiers.

Mr. GREENE. How long before this nebulous gathering of new interests of a feminine kind in the Army, like all nebulae, will begin to resolve itself into a world, and grow, with its satellites, into a universe? How long before this becomes a corps? [Laughter.]

Col. REES. I can not anticipate that it ever will, sir.

Mr. GREENE. Well, I have sat at this table too long not to have seen how these things grow.

Col. REES. I could not even imagine it, sir.

Mr. GREENE. All right.

Mr. MCKENZIE. Col. Rees, is there really a strong and pronounced demand among the enlisted men, or the commissioned personnel, to have this new departure in the Army?

Col. REES. Very decidedly, sir, out in the camps. You take the camp commanders, for instance, in half a dozen camps that I have visited: Gen. Summerall, at Camp Taylor; Gen. Bell, at Camp Grant; Gen. McGlachlin, at Camp Funston—they are all very keen to have this sort of activity carried on; they feel that it is doing more for the contentment and morale of the men—the whole recreational program—than anything that has ever come to the Army prior to this time. You will find our best generals commanding are heart and soul back of this program of recreation in the Army?

Mr. GREENE. Recreation in the Army; yes, but I was wondering—

Col. REES (interposing). All of these being features of that; I will just enumerate the recreational features, which are post exchanges; recreational athletics; music; dramatic entertainments; service clubs; libraries and community cooperation. There are seven of them, which are grouped as the recreational work in the Army. The recreational athletics, I think, need no comment. The music has been developed by many commanders to a very high degree in the organization of glee clubs, and organization of mass singers—many of them have those things regularly. In the dramatic entertainments, there are very successful soldier players who are giving amateur dramatics. There are seven troupes of soldier players already organized in the larger camps. And also under the head of dramatic entertainment is the whole moving-picture program that

we are running for the entire Army. We are even reaching down to the border posts and stations, and giving them an excellent service in the moving-picture line. Also under this dramatic entertainment, it is possible, quite frequently, to get a road theatrical show to give an entertainment at the camps.

Mr. McKENZIE. During the war, you know that we had song leaders. I suppose you would not expect to do that in peace times?

Col. REES. Only to a very small extent—one or two as experts to go around and instruct soldiers and officers in the duties of song leaders—that is all we have got for next year.

Mr. GREENE. I was just following with interest what you have said. Now, all of those things, the six that you have mentioned, are wholesome, of course, and have a practical benefit, unquestionably. They are not novel; the Army, in some form or another, has had them ever since I have known anything about it.

Col. REES. Yes, sir.

Mr. GREENE. And is not this true: Now, we are living in times when our friends, the psychologists, want to spin fine gossamers all the time and arrive at something; but is this not true, that for real, hardy social purposes that which comes out of the group itself, by its own initiative and invention, not only in the end probably contributes more wholesomely to the desired effect but raises the individual in the group that makes that independent effort by the very fact of making it?

Col. REES. That is absolutely true.

Mr. GREENE. And is that not very much to be preferred over this outside professionalism which comes in from that kind of instruction?

Col. REES. Yes, sir; that is absolutely what we are doing by this method; it is simply an encouragement to the men to do these things themselves.

Mr. GREENE. Then, why do they have "cheer leaders," and all the rest of that sort of thing, hitched to it? Now, in war times, with the enormous amount of men assembled, and having had no opportunity to develop that sort of thing, I can see the reason for bringing in some professional. But now that we are getting back to our normal selves, why can we not go back to the elementary principles which made our soldiers what they were—capable of self-preservation and able to lick the other fellow? Why do we not develop his own capacity for developing himself, instead of leaving him constantly to the supervision and administration of professionals from the outside?

Col. REES. That is exactly what we are going to do, and will do next year—

Mr. FIELDS (interposing). These instructors are only for the purpose of perfecting the organizations, and then the intention is to let the organizations operate upon their own initiative?

Col. REES. Yes, sir.

Mr. GREENE. That is what I am getting at: An organization that is not born in a group of men will not survive after its artificial stimulus is removed.

Col. REES. There is a technique in the organization—

Mr. GREENE (interposing). Well, if you want this strong thing spring, armed cap-a-pie, from the brain of Jove, very well; but if you want it to spring from the brain of the very men who are to develop it and carry it on, and make it a strong and active thing, it will stay and become permanent. But if you want to make a mere hothouse product of it, get professionals to start it.

Col. REES. Well, we are not going to have professionals down in the camps doing this work. But there is a consulting service that we can render, in a very small way, by having just a few men who have been experts in this whole, broad welfare game for years; and it is a very serious occupation, as we all know, from the work of the Red Cross and the Y. M. C. A.; we know that there are experts that can promote it and make it better in a very much shorter time.

You take the question of service clubs. We are organizing just as rapidly as we can—or there are being organized—a soldiers' council, to run the soldier clubs in each camp; and it will not be necessary for us to have civilians in a personal contact with the men themselves.

Mr. GREENE. I can not get away from your constant suggestion that all of these things seem to imply the necessity for maintaining somewhere on the Government pay rolls, band of nonmilitary men, civilians, who are to cooperate with the Army in running the Army's own affairs. Now, it boils itself down, every time, to the fact that you are still going to have some of those civilians.

Col. REES. There are very, very few of them.

Mr. GREENE. Well, it is a question of degree, and not of kind?

Col. REES. Yes, sir.

Mr. GREENE. And it is the principle that I am aiming at—

Col. REES. Except the women; we will have to hire the women.

Mr. MCKENZIE. Well, do you think that necessary, Colonel? Will you give your own private judgment on that?

Col. REES. Necessary to have these women?

Mr. MCKENZIE. Yes.

Col. REES. I do, sir. I have seen so much of it in the camps, where we must have some place where the men can decently congregate with women, that I think that, if we had not some one responsible on the women's side of it, I do not see how we can ever successfully do that.

Mr. MCKENZIE. Col. Rees, I would like to have you put in the record of the hearing an estimate of the number of civilians that you want to use for this purpose, giving the number of males and the number of females.

Col. REES. I will do that; yes, sir.

Mr. MCKENZIE. And the amount of money that will be required to take care of their pay.

Col. REES. For personnel?

Mr. MCKENZIE. Yes.

(The statement referred to is as follows:)

Appropriation: "Military post exchanges."

Items.	Estimated as required for enlisted strength of—			
	175,000	200,000	225,000	299,000
Construction (military post exchanges. To be explained by Construction Division).....	\$220,000	\$220,000	\$220,000	\$220,000
Post exchanges.....	3,500	3,500	3,500	3,500
Athletics.....	213,000	213,000	213,000	213,000
Community cooperation.....	4,000	4,000	4,000	4,000
Dramatic entertainment.....	52,100	52,100	52,100	52,100
Libraries.....	166,600	166,600	166,600	166,600
Music.....	9,500	9,500	9,500	9,500
Service clubs.....	164,300	164,300	164,300	164,300
Total.....	833,000	833,000	833,000	833,000
SUMMARY.				
Construction (military post exchanges. To be explained by Construction Division).....	220,000	220,000	220,000	220,000
Personnel (13 men, \$39,900; 90 women, \$165,300).....	205,200	205,200	205,200	205,200
Equipment.....	407,800	407,800	407,800	407,800
Total.....	833,000	833,000	833,000	833,000

STATEMENT OF BRIG. GEN. H. M. LORD, DIRECTOR OF FINANCE, WAR DEPARTMENT.

Mr. McKENZIE. Gen. Lord, have you anything further to submit?

Gen. LORD. I would like to make a brief statement, Mr. Chairman.

The amount stated by Col. Daly as allotted to the Finance Service, under Incidental Expenses, was \$2,080,000. Something more than half of this, I assume, is assignable to war work. This clerical force is divided into what will be utilized in the Zone Finance Office in Washington and what is utilized in the field, at such places where enlisted men can not be utilized because there are no barracks for their accommodation.

So that the committee may know the quantity and kind of work performed in the Zone Finance Office, this being really the first estimate that the Finance Service has submitted to the committee, I will state very briefly that the Zone Finance Office makes all payments to officers and enlisted men on the retired list, wherever they may be, and pays the accounts of officers which are made payable to banks, as is generally the custom with officers in the service. The Zone Finance Office handles all subscriptions for Liberty bonds. We have at the present time 242,142 allotments for Liberty bonds which we are settling—a most intricate task, because of faulty records which were received from overseas as to the amounts held and the allotments made.

Mr. McKENZIE. That is, in settling up with enlisted men who have bought bonds?

Gen. LORD. Yes, sir. You gentlemen have probably had complaints from men who have not received their bonds.

Mr. McKENZIE. I have had some complaints of that kind.

Gen. LORD. And in many cases we are obliged to go to the Auditor's Office and the office of The Adjutant General for the necessary information.

Mr. McKENZIE. I will say, Gen. Lord, that I have found in my experience that your work has been very satisfactorily performed.

Gen. LORD. We have had to work very hard. The results are not always satisfactory, because we can not find the records in many cases, but we have tried to adjust them all.

The Zone Finance Office handles all allotments of pay of officers and enlisted men. With the proposed strength of the Army we estimate that there will be 50,000 allotments of pay. We pay these allotments monthly by check, wherever the allottee may be located, whether in this country or elsewhere.

Mr. McKENZIE. What law do you pay those allotments under?

Gen. LORD. Act of March 2, 1899, amended by act of March 2, 1901, and act of October 6, 1917.

Mr. FIELDS. Well, the allotments should be discontinued, should they not?

Gen. LORD. No; this is the straight allotment of a soldier or an officer of the Regular Army to a member of his family; and it is particularly used by officers in Hawaii, China, the Philippine Islands, Alaska, and such places as that.

Mr. FIELDS. I was reading in the paper the other day where allotments should be discontinued; and that married men should not go into the service, because a soldier was not getting enough pay to warrant an allotment.

Gen. LORD. That probably has to do with some other kind of allotment, probably the war-risk insurance allotment; because this has been the law for a long time.

Mr. McKENZIE. Is it voluntary on the part of the soldiers?

Gen. LORD. It is voluntary on the part of the soldiers; and the officer is also authorized to make an allotment of his pay.

The Zone Finance Office also pays the \$60 bonus granted in the law of February 24 last. The Zone Finance Office has paid 1,635,422 of these allotments, at a cost to the Government of \$98,125,320. These are bonuses paid to soldiers who were separated from the service at the time the bonus provision became a law; and we were obliged to go out into the byways and hedges and find them and look up their records and make the payments. The total amount expended for the bonus up to date, including payments to those who were in the service at the time and who were paid the bonus on discharge, and the amount already paid the men who were out of the service when the bill became a law, is \$220,000,000. It will probably reach \$226,000,000 by June 30, 1920.

Mr. FIELDS. Do you have any way of estimating how many of those claims are still outstanding and unsettled?

Gen. LORD. I figure that there are approximately 200,000 of these claims still to come across; but that may be an extravagant estimate, because it is based on very indefinite information.

Mr. FIELDS. The only way you could arrive at it would be by taking the total number of men that were in the service, and the number that were in the service at the time who have been discharged since.

Gen. LORD. That is correct. The zone finance office also handled the additional travel allowance, which was another act of the preceding Congress. The date of that law is February 28, 1919; it increased the travel allowance of enlisted men from 3.5 cents to 5

cents a mile. We paid in the zone finance office this travel allowance, or this difference, to those who were out of the service at the time that bill became a law. We have paid 144,824 of these cases, at an expense of \$272,623.83; and we estimate that there are approximately 250,000 of these claims yet to be filed; they are coming in at the rate of 200 or 300 per day.

Mr. McKENZIE. You have a sufficient clerical force, so that you keep right up to date, have you?

Gen. LORD. We are current on all of these now; we will not be current after July 1. The condition of the appropriation has compelled a reduction of our force, which we are bringing about now. We reduced our force 5 per cent in April and we will reduce it 10 per cent this month, and so on. The Secretary of War's instructions were that there should be no deficiency incurred.

A recent decision of the Comptroller of the Treasury as to that foreign-service pay has thrown upon this office the payment of approximately 350,000 additional claims.

Mr. McKENZIE. That is, the increased pay of soldiers who have served abroad?

Gen. LORD. Yes, sir.

Mr. McKENZIE. And they only got the 20 per cent increase on the \$15 a month, instead of on the \$30, as provided by the act of Congress?

Gen. LORD. That is exactly right; the men prior to July 11 were not entitled to it. It affects only the men who were overseas on and after July 11, 1919, the date of the approval of the act.

The transportation and telegraph accounts of the Army are all paid by the zone finance office. Prior to the war they were paid partly here in Washington, partly in Chicago, a portion of them in St. Louis, and the others in San Francisco. These accounts are now all concentrated in this office. We pay all transportation accounts of the Army.

Mr. McKENZIE. As a matter of information, what is the monthly expense for telegrams, if you can give it off hand?

Gen. LORD. I could not tell you that. I can give you an average figure that will approximate that very closely. At the present time, we have \$36,000,000 of these transportation and telegraph accounts awaiting settlement. We accommodated the Railroad Administration by making advance payments. The railroads were not able to submit their accounts, but we receive a carbon copy of the bill of lading in each case as it is issued, so that we can always tell approximately the amount that we owe to the railroads.

NOTE.—The monthly expenditure for telegrams and cables for the first five months of the current fiscal year was \$41,835.53. This period covered heavy demobilizations of troops.

We have made no advance to the railroads since they were taken back from the Railroad Administration, but we have made advances to the Railroad Administration. We were able to do that, inasmuch as it was a Government instrumentality; but we will not be able to do that with the railroads as commercial institutions.

Mr. McKENZIE. It was your office that issued that famous check for \$100,000,000, was it not?

Gen. LORD. If you will recall, when Congress adjourned March 4, we had a deficiency estimate in the deficiency bill that failed, for something more than \$800,000,000, to pay the ordinary expenses of the Army, and to meet the bills due contractors on our settlements.

The Railroad Administration had an estimate for \$740,000,000 in that same deficiency bill. We owed them at that time something more than \$100,000,000; and we decided that it was necessary, under the conditions, to make payments out of what money was available, under whatever appropriation it might be, to meet whatever obligations had been legitimately incurred.

So, after reaching that decision, the first payment that we made was an advance payment to the Railroad Administration of \$100,000,000, in one check, for the purpose of enabling it to pay its employees. It had no money at that time.

The Zone Finance Office in Washington, in February last, this preceding month, disbursed \$50,040,358.63. Of this amount, the transportation and telegraph accounts were \$37,164,663.29. That will give you somewhat of a picture of the character of the work there, a great deal of it being an inheritance from the war and of a character that does not permit of much delay, because it breeds a great deal of complaint, that you gentlemen in Congress hear as soon as we do.

Mr. McKENZIE. Are there many complaints coming in from people who have sold supplies to the Government due to delay on the part of your office in making payment therefor?

Gen. LORD. Not to our office. Some Members of Congress, when they have received complaints have forwarded them to the Director of Finance for a statement or explanation. Mr. Caldwell, of this committee, I remember, sent in one complaint. In all of these cases we find that, so far as the Finance Service is concerned, there was absolutely no delay, and the evidence showed that the War Department's obligations have been and are being paid more promptly than ever before. I speak from experience, because I had charge of the payments for the Quartermaster Corps from the beginning of the war, prior to the inception of the Finance Service, and I know that accounts are being paid more promptly than ever before. This is further evidenced by the fact that we are now, because of prompt payments, taking advantage of all available discounts with the exception of a small percentage. At the time of the consolidation of the finance activities of the various War Department bureaus under the Director of Finance it was estimated that we were losing approximately 75 per cent of the discounts. We now are getting the benefit of all with the exception of less than 10 per cent, and that loss is due exclusively to failure to receive reports from the supply bureaus and is in nowise due to failure of the Finance Service to function properly. I will insert in the record the following letter from the Merchants' Association of New York which furnishes some pertinent information on this subject:

THE MERCHANTS' ASSOCIATION OF NEW YORK,
January 26, 1920.

HON. JULIUS KAHN,
Chairman Committee on Military Affairs,
House of Representatives, Washington, D. C.

DEAR SIR: On November 13, 1919, the board of directors of the Merchants' Association of New York, after careful consideration of a joint recommendation on the subject from its industrial and military committees, approved the continuance of a separate Finance Service in the War Department as at present constituted. Among the several reasons for this action was the belief that the present system is more conducive than the former to prompt payment of Government accounts. Recently we have received two or three communications from persons who are inclined to disagree

with us on this point because all Government contracts are not now paid promptly. Inasmuch as this question of present delays will undoubtedly be called to the attention of the Military Affairs Committee also, we beg to inform you that from our experience we feel certain that undue delays in payment for Government supplies at present are not traceable to the operation of a separate Finance Service.

Many of the 6,000 members of the Merchants' Association are important suppliers of merchandise to the Government, and consequently during the war and for several months after the signing of the armistice the association was constantly in receipt of requests from members for assistance in obtaining payments from the War Department. From our extensive contact with the situation we became convinced that under the former system the only officers with whom the contractor could deal were necessarily and properly most concerned in obtaining prompt delivery of goods, in making certain of their quantity and quality, and in investigating conditions within their own department which were resulting in delayed or improper delivery. There were no officers whose duty it was to see that the Government made prompt payment for its purchases, thus conserving the Government's purchasing strength by satisfying the contractors bidding for Government orders.

When the Army Finance offices in New York City were consolidated and operated as a separate service the conditions surrounding the settlement and payment of Government contracts rapidly improved. In taking up a number of cases for members with the local Finance Officer we found that delays then existing were due chiefly to the time taken to approve the invoices, and that usually after such approval was made a comparatively few days elapsed before final payment was effected through the Finance officer. Within a short time after the establishment of the separate Finance Service we were able to obtain satisfactory adjustment in cases of delay which members had brought to our attention, and we have since had no complaints whatever from our large membership. This favorable change in the situation has been due, we believe, to the fact that there has been in this city an officer whose duty it is to make prompt payment for merchandise in accordance with business practices, and who can do this by exerting constant pressure of an official nature on those bureaus of the War Department which make purchases and approve invoices.

We believe that the merchants and manufacturers upon whom the Government must rely to obtain its supplies are entitled to proper consideration of their claims for prompt payment as is the case in ordinary business relations. For this purpose it seems to us to be necessary that the War Department have a separate division like the Finance Service whose duty it will be to see that the Government pays for its supplies with promptness, thus treating the merchant and manufacturer in a businesslike manner and improving the position of the Government as a buyer by creating a reputation for dealing on sound business principles.

Very truly, yours,

THE MERCHANTS' ASSOCIATION OF NEW YORK.
By S. C. MEAD, *Secretary*.

Mr. McKENZIE. Well, as the days go by and you get more and more experience in this matter, are you still firmly convinced that the separate Finance Service is not only economical, but that it is efficient?

Gen. LORD. There is not the slightest question of that. It is not only theoretically correct, but it is practically correct and operatively correct.

Mr. McKENZIE. And economically correct?

Gen. LORD. And economically correct in every way.

Mr. McKENZIE. All right; you may proceed.

Gen. LORD. A new duty that has been devolved upon the Finance Service is that of auditing contract and property accounts. Prior to the war, each bureau had its own system of property accounting, and its independent property accounting and auditing force in Washington. It was a large auditing force; and the accounts were sent in here for checking up each bureau having an independent service. The Quartermasters Corps had a large clerical force in Washington to handle property accounts.

The new system of auditing provides for a field audit, which we never had before. Now we make an actual physical audit of the

property; if the property is not there, somebody is held responsible. Out of this system of auditing has developed a most profitable activity for the Government.

The most of the time of our auditing force up to date has been confined to the auditing of material contracts, so called; that is, where Government goods have been issued to contractors and the contractors manufacture certain articles for the Army, and return the completed articles, and are supposed to return the balance, the waste, or whatever may be left of the materials. As far as I can ascertain, there never has been heretofore any systematic method of doing this exceedingly important work.

My attention was first called to this problem prior to the floating of the Victory loan, when we found that complaints came in that we were holding up final payments on contracts until we could check up this material. These complaints were directed against the Finance Service. The complaints were justified; we were holding up final payments, because I had issued instructions that we would not make the final payments, until the contractor had accounted for every pound, and every square yard of Government property that had been turned over to him.

But these men complained that, while there might be slight discrepancies in the property, there were millions of dollars involved in the final payments, and they could not subscribe for Victory bonds because the Government was withholding this money. And so I went to New York to study actual conditions. The question was a particularly vital one, and there were more complaints from that source than any other, as that had always been our most important supply point. I solved the problem by instructing the finance officers to pay the contractor every penny due him, with the exception of a nominal amount—it might be \$100 or \$10—which would be sufficient to hold the contractor's bond; and then we, at our leisure, could audit the contract and the material.

In that way we succeeded in clearing the atmosphere and giving these men their money, practically all of it, so that they had no excuse for not taking the bonds.

And then we proceeded to audit these material contracts. Up to and including December 31 last, and our auditors had not been at work all the year, we found that there was due the Government from these quartermaster material contracts \$2,044,736.79 for material that these contractors had had, that they had not returned and had not accounted for. Of this amount \$548,032.18 was removed by boards of survey; and we have collected and are collecting the balance, \$1,496,704.61, from this particular class of contracts; and we are not through with them yet.

We also found in possession of contractors under this same audit, which we brought back into the possession of the Government and which would have been recovered in no other way, property amounting to \$320,000. Now, all of these other figures are the actual recovery of funds, with the exception of this \$320,000 for property that we put our hands on and brought back into the possession of the Government.

By way of further illustration, in another class of contracts which involved steel, we found to be due the Government and either have collected or are in process of collecting \$5,576,442.03. I do not hesi-

tate to say that in no other way except through an independent finance service could any large part of this money ever have been collected, for the very evident reason that an agency that obligates and contracts can not exercise accounting authority over itself. In the most of these cases there was absolutely no intent to defraud the Government, but in the hurry of settling these contracts and closing them up and getting on to the next work some extraordinary amounts due the Government were overlooked. So I will repeat that under these steel contracts we found due the Government \$5,576,442.03.

Since I have prepared this statement to come before this committee I have added to this amount \$588,000, discovered in one contract for nonferrous metals. This one was a copper contract. In a certain leather contract we found due the Government and now being collected \$125,000.

Under authority from the Secretary of War to modify awards made the Finance Service saved the Government \$149,948.63.

Again, since this first saving of \$588,000 on copper contracts was made, I received notification from the finance representatives in the field of a collection at Detroit, Mich., of \$340,000 on a steel contract.

Now, that makes the total \$9,024,855. And we are just entering upon this work. I thought that we had probably opened up the contracts that would yield the largest amount and that recoveries would be less in amount, but the latest ones seem to yield the largest returns, and our incursion into the field of nonferrous metals is so encouraging that I am satisfied that there are many millions of dollars yet to be recovered.

Now, I can not do this work unless you allow me, in this bill, sufficient money to pay these people.

Mr. McKENZIE. Have you an amount in the bill that you think will take care of that?

Gen. LORD. It is in Incidental Expenses. I did not think it was wise to anticipate action of Congress by submitting a specific estimate for the Finance Service, and so it is included in Incidental Expenses.

I have been over that estimate carefully with Col. Daly, and I know that that total estimate is a very conservative one. The estimate under Incidental Expenses provides the field personnel for both the Finance Service and the Quartermaster General.

If Incidental Expenses are cut to any extent the Finance Service is cut proportionately. I am satisfied that every penny of the estimate is needed and will be profitably expended.

Mr. McKENZIE. What is the total estimate for incidentals?

Gen. LORD. The total estimate for Incidental Expenses, for an Army of 175,000, is \$10,213,691; for the current year, the appropriation is \$30,000,000.

Mr. McKENZIE. It would be your judgment that in another year you would not require a large appropriation to take care of your end of it?

Gen. LORD. A hasty estimate would be that a little over half of this is an inheritance from the war; that is, of the estimate that I submit. It is impossible to-day to estimate what our normal demands will be, after we get out of this present condition, because new things are constantly coming along, like the 350,000 claims arising from the decision of the Comptroller of the Treasury. When you

realize that in each one of these claims we must go to the auditor's office and get out the account of a soldier, examine his pay roll, and find his entire military history—when you realize that, you can see the enormous amount of work that is involved in that one decision of the comptroller. And those cases do not let up on us at all.

I desire to make as eloquent a plea as I can for the preservation of the estimate under incidental expenses. In that estimate are included the field forces for the Quartermaster General and for the finance service.

Mr. McKENZIE. I want to say, Gen. Lord, that your eloquence is usually very persuasive.

Gen. LORD. I hope it will be in this instance.

Mr. McKENZIE. And if you can back up your eloquence by figures which will show the House that this appropriation will save the Government many millions of dollars, that is the character of oratory that we want.

Gen. LORD. Well, we are on the edge of that profitable field. I am startled when I think what the possible results of that work are. I am using all the available forces I have; and I am educating people in the work, so that they can go into the field and get returns. It is difficult to find men who can do that kind of work without some preparation for it.

Mr. McKENZIE. I understand. Let me ask you this question; I do not know whether you would want your answer to go into the record or not:

Have you taken any steps in the various States where corporations were licensed who had contracts with the Government and whose accounts you have been somewhat suspicious of, to prevent a dissolution of the corporation which would enable it to evade responsibility?

Gen. LORD. We had one case in an eastern district where an account had been settled in full, and we found a discrepancy in Government material amounting to \$174,739.75. We learned that this firm had begun dissolution proceedings at the State capital, and I immediately telegraphed to the secretary of state requesting that the dissolution proceedings be suspended, and it was done. I think we would have been protected anyhow under the laws of New York, but we thought it safer and better to deal with the organization itself rather than with the individuals.

Mr. McKENZIE. And you recovered the money?

Gen. LORD. Well, we will recover the money.

Mr. McKENZIE. Well, that is an evidence that you are diligent in protecting the interests of the Government to that extent.

Gen. LORD. We have been diligent, and have tried to solve these various problems in the wisest way possible; of course, we are not infallible.

Mr. McKENZIE. No; of course not.

Gen. LORD. During the hearings under the reorganization bill, on page 1680 of the printed record of the hearings before this committee, attention was called by the chairman of the committee to the fact that at the end of every year certain portions of annual appropriations are not expended, and that at times considerable amounts have eventually reverted to surplus funds of the Treasury at the expiration of the three years required under the law.

These amounts, which from 1907 down to 1918 approximated \$75,000,000, are charged against the Army, because they were appropriated for the Army, and the Army gets no credit for any saving that it may exercise whereby unexpended balances finally revert to the Treasury.

This was brought out in the discussion, and the chairman of the committee asked that I submit some proposed legislation that would allow the Army to take advantage of this particular condition, and I submitted in the hearings a proposal along these lines.

I have here now an amended proposal, and I will read it to the committee, for such consideration as it sees fit to give to it.

That not to exceed 10 per centum of any appropriation made in this act shall be available for the purpose of any other appropriation contained therein, subject to the limitation that no appropriation shall be augmented by more than 10 per centum of its total: *Provided*, That a detailed report shall be made to Congress on the first day of each regular session of the funds used from any appropriation for the purpose of any other appropriation, showing the necessity therefor and the object or purpose for which used.

This is in the way of a budget provision, which this committee has not heretofore looked upon with much favor. This, I think, will tend largely to reduce the submission of deficiencies. Let me illustrate that.

We have an appropriation for claims for damages for the current year of \$40,000. The information that I received from the board of appraisers is that there will be a deficiency under this appropriation, which will necessitate my going before the House Committee on Appropriations and submitting an estimate. Suppose the deficiency is only \$3,000 or \$1,000 or \$30; it will require a deficiency appropriation. Under this proposed amendment the Secretary of War, having a little surplus under some other appropriation, can take the necessary amount from that and supply that deficiency; but in no case is he authorized to add more than 10 per cent of what the appropriation originally was; and in no case is he authorized to take from any appropriation more than 10 per cent. That protects the original appropriation, and it also prevents an undue augmenting of other appropriations—

Mr. McKENZIE (interposing). There is a limitation upon the amount which may be transferred?

Gen. LORD. There is a limitation upon the amount. I do not see why it would not work; I do not see where it could lead to any abuse; and I would like to have the committee carefully consider it, because I am sure it would remove many difficulties we now have. It will furnish an incentive to save, so as to have at the end of a fiscal year a little reserve to meet deficiencies that may have been occasioned by some unforeseen emergency.

Mr. FIELDS. Did I understand you correctly to say that you could not add to an appropriation more than 10 per cent?

Gen. LORD. That is correct; not under that amendment.

Mr. FIELDS. They could not take 10 per cent from one appropriation, and 10 per cent from another, and 10 per cent from a third appropriation, and in that way add 30 per cent to an appropriation?

Gen. LORD. No; if the appropriation was originally \$10,000, they could add no more than \$1,000 to it from any source.

Mr. McKENZIE. Is that all that you desire to state, Gen. Lord?

Gen. LORD. That is all.

Mr. McKENZIE. We are much obliged to you, and we will take that matter up.

Gen. LORD. At the end of the hearing, I will submit a table showing the total amounts estimated for four strengths—the full strength of 299,000 enlisted men authorized in the reorganization bill as it passed the House of Representatives, which is the estimate approved by the Secretary of War, and estimates for armies of 225,000, 200,000, and 175,000, in compliance with request of the committee. I will also furnish a statement showing what portions of the amounts estimated are definitely chargeable to the war.

Mr. McKENZIE. All right, Gen. Lord, we will be glad to have that. (The following statements were subsequently submitted by Gen. Lord:)

APRIL 7, 1920.

1. The financial requirements of the Army for the next fiscal year include a considerable quantity of work incident to closing out business pertaining exclusively to the World War, such as the settlement of claims, the disposition of property, and the temporary care taking of property which will eventually have to be disposed of. In addition, there are a number of items of work regularly appropriated for in the Army appropriation act which may be termed as "quasi military," such as expenses incident to the Reserve Officers' Training Corps, and to the training of reserve officers and of civilians. There are also a few items, which, while handled by the Army, are largely accomplished for the benefit of the public generally rather than the military establishment, such as roads in Alaska, and the Washington-Alaska cable; these items also may be included under the head of "Quasi military." The items pertaining to the cleaning up of the war work and to quasi military activities should not be considered as pertaining to the normal military requirements. They have, accordingly, been listed separately in the accompanying tabulation in columns Nos. 2 and 3, respectively. As will be noted from the table, the total requirements incident to the cleaning up of war work are \$33,441,115.77, and the total quasi military requirements are \$15,479,701.67, the aggregate of the two classes of requirements being \$48,920,817.44.

2. With reference to the items for "cleaning up war work," it should be noted that only such amounts as are readily separable for this purpose have been included and that no attempt has been made to include thereunder conjectural pro rata charges, which, while justly chargeable to the work, can not be readily or accurately segregated from the normal military requirements; for example, no attempt is made to allocate to this classification any amounts for pay or for subsistence, clothing, housing, or transportation of the military personnel, which will be required in connection with the salvage and sale of property, and the settlement of claims. On the other hand, allowance has been made under "Subsistence of the Army" to provide for the subsistence of men in hospitals, who are retained in the service on account of physical disability pending their discharge from the hospitals.

3. Many of the appropriations contained in the Army act are for expenses which may be generally termed as overhead charges, such as contingent expenses, the support of the various service schools and similar classes of expenditures. There are also numerous items the size of which is governed largely by the quantity of property to be handled or maintained, such as most of the appropriations of the Ordnance Department and the appropriations for maintenance under the Construction Division; while still other appropriations are dependent solely upon the requirements of specific projects of work, such as construction and mapping or similar projects.

These numerous items are not appreciably affected at this time by variations in the enlisted strength of the Army, and a separate column is, accordingly, shown for items of this class. Even appropriations which as a whole vary on account of changes in the enlisted strength, such as those for subsistence and for clothing, contains items which are not affected by the enlisted strength, and accordingly portions of the estimates, even under these appropriations, are included in this column of "constant items not affected by enlisted strength." It will be noted that the total of these constant items is \$181,179,054.42, which is 46 per cent of the total normal military requirements for an enlisted strength of 175,000; 43 per cent of the requirements for 200,000 enlisted strength; 40 per cent of the requirements for 225,000 enlisted strength;

and 34 per cent of the requirements for 299,000 enlisted strength. These figures indicate the difficulty of making any fair statement of the per capita cost of the Army.

4. The estimated cost of the Air Service is shown separately in the accompanying tabulation, since the amount to be appropriated for this purpose is a matter to be determined solely upon considerations which are entirely separable from questions of general military policy. Of the \$60,000,000, estimated by the Department, \$2,488,454.98 is chargeable to the cleaning up of war work. For a similar reason, the estimates for the National Guard are stated separately from the other military requirements.

5. The aggregate amount estimated for the Army bill on a basis of an enlisted strength of 175,000, as shown on the accompanying tabulation, is as follows:

1. Normal military requirements (column 7).....	\$393, 904, 103. 89
2. Extraordinary and quasi-military requirements (column 4).....	48, 820, 817. 44
3. Air Service.....	60, 000, 000. 00
4. National Guard.....	72, 808, 200. 00
Total.....	575, 693, 121. 33

For enlisted strengths of 200,000, 225,000 and 299,000 the aggregates may similarly be secured by substituting for column 7, columns 9, 11, and 13, respectively

Estimates for Army bill, fiscal year 1921.

General objects.	Extraordinary and quasi-military requirements.			Normal military requirements.		
	Cleaning up war work.	Quasi-military only.	Total extraordinary and quasi-military requirements.	For all strengths (constants).	Variable items and alternative totals.	
					Enlisted strength, 175,000.	Total normal military requirements.
(1)	(2)	(3)	(4=2+3)	(5)	(6)	
Secretary of War:	\$600,000.00		\$600,000.00	\$100,000.00		\$100,000.00
Contingencies of the Army.....						
Chief of Staff:						
Army War College.....				25,620.00		25,620.00
Contingencies, Military Intelligence Division, General Staff Corps.....				400,000.00		400,000.00
Expenses of military observers abroad.....				25,000.00		25,000.00
United States service schools.....				100,000.00		100,000.00
Field Artillery activities.....				7,500.00		7,500.00
Chief of Staff, total.....				559,120.00		559,120.00
Adjutant General's Department:						
Contingencies, headquarters of military departments, districts and tactical commands.....				9,000.00		9,000.00
Chief of Coast Artillery:						
Coast Artillery school, Fort Monroe, Va.....				37,400.00		37,400.00
Chief Signal Officer:						
Signal Service of the Army.....	50,000.00		50,000.00	6,636,000.00		6,636,000.00
Washington-Alaska military cable and telegraph system.....		\$140,000.00	140,000.00			
Chief Signal Officer, total.....	50,000.00	140,000.00	190,000.00	6,636,000.00		6,636,000.00
Supplies, services, transportation, and construction:						
Pay, etc., of the Army.....		3,082,004.00	3,082,004.00	70,468,913.00		158,286,140.00
Mileage.....		1,000,000.00	1,000,000.00	2,000,000.00	\$87,817,227.00	2,000,000.00
General appropriations, Quartermaster Corps—						
Subsistence.....	600,916.40		600,916.40	4,514,733.27	43,720,091.35	48,214,924.62

Regular supplies—					
Construction.....	200,000.00	50,000.00	250,000.00	7,887,000.00	7,887,000.00
Purchase and storage.....	425,050.00	577,665.00	577,665.00	5,510,000.00	5,510,000.00
Incidental expenses.....		58,800.00	483,860.00	240,265.00	9,729,811.00
Transportation of the Army and its supplies—					
Motor Transport Corps.....	16,196,360.00		16,196,360.00	12,160,712.64	28,196,499.60
Water and sewers at military posts.....	1,328,275.37	1,530,952.67	2,859,228.04	8,019,478.96	8,019,478.96
Clothing and camp and garrison equipage.....	5,600,000.00	2,442,400.00	8,042,400.00	5,246,729.70	7,000,000.00
Horses for C. A. E., etc.....				2,364,577.00	18,940,245.33
Barracks and quarters.....					3,727,077.00
Military post exchanges.....					13,520,000.00
Barracks and quarters, Philippine Islands.....					833,000.00
Roads, walks, wharves, and drainage.....					250,000.00
Construction and repair of hospitals.....					4,725,000.00
Quarters for hospital stewards.....					4,267,000.00
Shooting galleries and ranges.....					30,000.00
Walter Reed Medical Center.....					100,000.00
Claims for damages, etc., private property.....					500,000.00
Reut of buildings, Quartermaster Corps.....	140,300.00		140,300.00	40,000.00	500,000.00
Vocational training.....				84,700.00	40,000.00
Quartermaster supplies and services for rifle ranges for civilian instruction.....		300,000.00	300,000.00		84,700.00
Quartermaster supplies, equipment, etc., Reserve Officers' Training Corps.....		3,220,000.00	3,220,000.00		5,729,500.00
Quartermaster supplies for military equipment of schools and colleges.....		100.00	100.00		
Inland and port storage and shipping facilities—					
Purchase and storage.....	5,000,000.00	1,227,825.00	1,227,825.00		1,227,825.00
		1,000,000.00	6,000,000.00		12,048,467.88
Supplies, services, transportation, and construction, total.....	29,490,901.77	14,489,746.67	43,980,648.44	158,496,592.42	369,124,196.39
Medical Department:					
Medical and Hospital Department.....	1,000,000.00	40,000.00	1,040,000.00	1,585,000.00	3,160,000.00
Hospital care, Canal Zone garrisons.....				60,000.00	60,000.00
Land, etc., Walter Reed General Hospital, District of Columbia.....					
Army Medical Museum.....				20,000.00	20,000.00
Library, Surgeon General's Office.....				20,000.00	20,000.00
Medical Department, total.....	1,000,000.00	40,000.00	1,040,000.00	1,685,000.00	3,260,000.00
Bureau of Insular Affairs:					
Care of Insane Filipino soldiers.....				1,000.00	1,000.00
Care of Insane soldiers of Porto Rico Regiment of Infantry.....				100.00	100.00
Bureau of Insular Affairs, totals.....				1,100.00	1,100.00
Engineer Department:					
Engineer Department.....					
Engineer depots.....				22,000.00	22,000.00
Engineer School.....				50,000.00	50,000.00
Buildings, Engineer School, and College of Military Research, Camp A. A. Humphreys, Va.....					
Engineer equipment of troops.....	10,000.00	21,155.00	31,155.00	500,000.00	500,000.00
Civilian assistants to Engineer officers.....				110,000.00	203,100.00
Engineer operations in the field.....	510,000.00	28,500.00	538,500.00	40,000.00	40,000.00
Contingencies, Engineer Department, Philippine Islands.....				479,352.50	479,352.50
				2,500.00	2,500.00

Estimates for Army bill, fiscal year 1921—Continued.

General objects.	Extraordinary and quasi-military requirements.				Normal military requirements.	
	Cleaning up war work.	Quasi-military only.	Total extraor- dinary and quasi-military requirements.	For all strengths (constants).	Variable items and alternative totals.	
					Enlisted strength, 175,000.	Total normal military requirements.
(1)	(2)	(3)	(4=2+3)	(5)	(6)	(7=5+6)
Engineer Department—Continued.						
Military surveys and maps.....		\$150,000.00	\$150,000.00	\$92,700.00		\$92,700.00
Construction and maintenance of military and post roads, bridges, and trails, Alaska.....		100,000.00	100,000.00			
Engineer Department, totals.....	\$520,000.00	290,655.00	819,655.00	817,200.00	\$572,452.50	1,389,652.50
Ordnance Department:	1,780,214.00		1,780,214.00	5,340,642.00		5,340,642.00
Ordnance service.....				1,600,000.00		1,600,000.00
Ordnance stores, ammunition.....				960,000.00		960,000.00
Small-arms target practice.....				1,000,000.00		1,000,000.00
Manufacture of arms.....				1,655,000.00		1,655,000.00
Ordnance stores and supplies.....				1,000,000.00		1,000,000.00
National trophy and medals for rifle contests.....		10,000.00	10,000.00	1,000,000.00		1,000,000.00
Automatic rifles.....				1,208,000.00		1,208,000.00
Armored motor cars.....						
Banks.....		100.00	100.00			
Ordnance equipment for rifle ranges for civilian instruction.....		500,000.00	500,000.00			
Civilian military training camps.....		100.00	100.00			
Ordnance equipment stores, etc., Reserve Officers' Training Corps.....		100.00	100.00			
Ordnance supplies for military equipment of schools and colleges.....						
Ordnance Department, total.....	1,780,214.00	510,300.00	2,290,514.00	12,763,642.00		12,763,642.00
Tank Corps:						
Tank service.....				79,000.00		79,000.00
Incidental expenses, Tank Corps schools.....				5,000.00		5,000.00
Tank Corps, total.....				84,000.00		84,000.00
Grand total.....	33,441,115.77	15,479,701.67	48,920,817.44	181,179,654.42	212,785,049.47	393,964,103.89

Normal military requirements—Continued.						
Variable items and alternative totals—Continued.						
Enlisted strength, 200,000.		Enlisted strength, 225,000.		Enlisted strength, 299,000.		
Amounts dependent on enlisted strength.	Total normal military requirements.	Amounts dependent on enlisted strength.	Total normal military requirements.	Amounts dependent on enlisted strength.	Total normal military requirements.	
(8)	(9—5+8)	(10)	(11—8+10)	(12)	(13—5+12)	
(1)						
General objects.						
Secretary of War:						
Contingencies of the Army.						
.....	\$100,000.00	.....	\$100,000.00	.....	\$100,000.00	
Chief of Staff:						
Army War College.....	26,620.00	.....	26,620.00	.....	26,620.00	
Contingencies, Military Intelligence Division, General Staff Corps.....	400,000.00	.....	400,000.00	.....	400,000.00	
Expenses of military observers abroad.....	25,000.00	.....	25,000.00	.....	25,000.00	
United States service schools.....	100,000.00	.....	100,000.00	.....	100,000.00	
Field Artillery activities.....	7,500.00	.....	7,500.00	.....	7,500.00	
Chief of Staff, total.....	559,120.00	.....	559,120.00	.....	559,120.00	
Adjutant General's Department:						
Contingencies, headquarters of military departments, districts and tactical commands.....						
.....	9,000.00	.....	9,000.00	.....	9,000.00	
Chief of Coast Artillery:						
Coast Artillery school, Fort Monroe, Va.....						
.....	37,400.00	.....	37,400.00	.....	37,400.00	
Chief Signal Officer:						
Signal Service of the Army.....						
.....	6,636,000.00	.....	6,636,000.00	.....	6,636,000.00	
Supplies, services, transportation, and construction:						
Pay, etc., of the Army.....	\$100,119,663.00	\$112,509,165.00	182,978,078.00	148,795,153.00	219,264,066.00	
Mileage.....	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	
General appropriations, Quartermaster Corps—						
Subsistence.....	49,688,729.81	55,646,262.20	60,161,015.47	66,090,820.50	70,605,553.77	
Regular supplies.....	54,203,463.08	.....	.....	.....	.....
Construction.....	7,887,000.00	.....	7,887,000.00	.....	7,887,000.00	
Purchase and storage.....	31,964,694.00	35,610,710.00	41,121,700.00	42,077,074.00	47,588,064.00	
Incidental expenses.....	10,746,362.00	12,114,312.00	12,354,547.00	14,336,780.00	14,577,015.00	
Transportation of the Army and its supplies—						
Transportation service.....	19,700,926.96	22,436,948.96	34,597,661.60	28,931,349.96	41,062,062.60	
Motor Transport Corps.....	9,284,660.96	10,551,360.96	10,551,360.96	13,579,008.29	13,579,008.29	

Estimates for Army bill, fiscal year 1921—Continued.

	Normal military requirements—Continued.					
	Variable items and alternative totals—Continued.					
	Enlisted strength, 200,000.	Enlisted strength, 225,000.	Enlisted strength, 250,000.	Enlisted strength, 275,000.	Enlisted strength, 300,000.	Enlisted strength, 325,000.
General objects.	Amounts dependent on enlisted strength.	Total normal military requirements.	Amounts dependent on enlisted strength.	Total normal military requirements.	Amounts dependent on enlisted strength.	Total normal military requirements.
	(8)	(9-5+8)	(10)	(11-5+10)	(12)	(13-5+12)
(1)						
Supplies, services, transportation, and construction—Continued.						
General appropriations, Quartermaster Corps—Continued.						
Water and sewers at military posts.....		\$7,000,000.00		\$7,000,000.00		\$7,000,000.00
Clothing and camp and garrison equipage.....	\$10,865,945.22	21,559,360.85	\$13,502,813.99	24,196,329.62	\$18,097,814.37	28,791,330.00
Horses for C. A. E. etc.....	2,754,160.00	3,116,660.00	3,143,740.00	3,506,240.00	4,412,346.50	4,774,846.50
Barracks and quarters.....		13,522,000.00		13,522,000.00		13,522,000.00
Military post exchanges.....		833,000.00		833,000.00		833,000.00
Barracks and quarters, Philippine Islands.....		250,000.00		250,000.00		250,000.00
Roads, walks, wharves, and drainage.....		4,725,000.00		4,725,000.00		4,725,000.00
Construction and repair of hospitals.....		4,287,000.00		4,287,000.00		4,287,000.00
Quarters for hospital stewards.....		30,000.00		30,000.00		30,000.00
Shooting galleries and ranges.....		100,000.00		100,000.00		100,000.00
Walter Reed Medical Center.....		500,000.00		500,000.00		500,000.00
Claims for damages, etc., private property.....		40,000.00		40,000.00		40,000.00
Rent of buildings, Quartermaster Corps.....		84,700.00		84,700.00		84,700.00
Vocational training.....		6,667,000.00		7,604,500.00		9,857,000.00
Inland and port storage and shipping facilities—						
Transportation service.....		1,227,825.00		1,227,825.00		1,227,825.00
Purchase and storage.....		12,048,467.88		12,048,467.88		12,048,467.88
241,812,061.95	400,298,654.37	431,006,425.53	273,119,833.11	346,177,347.62	504,663,940.04	
Supplies, services, transportation, and construction, total.....						
Medical Department:						
Medical and Hospital Department.....	1,800,000.00	3,385,000.00	2,025,000.00	3,410,000.00	2,061,000.00	4,276,000.00
Hospital care, Canal Zone garrisons.....		60,000.00		60,000.00		60,000.00
Army Medical Museum.....		20,000.00		20,000.00		20,000.00
Library, Surgeon General's Office.....		20,000.00		20,000.00		20,000.00
Medical Department, total.....	1,800,000.00	3,465,000.00	2,025,000.00	3,710,000.00	2,061,000.00	4,376,000.00

ARMY APPROPRIATION BILL, 1921.

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